STATO MAGGIORE DELL'ESERCITO

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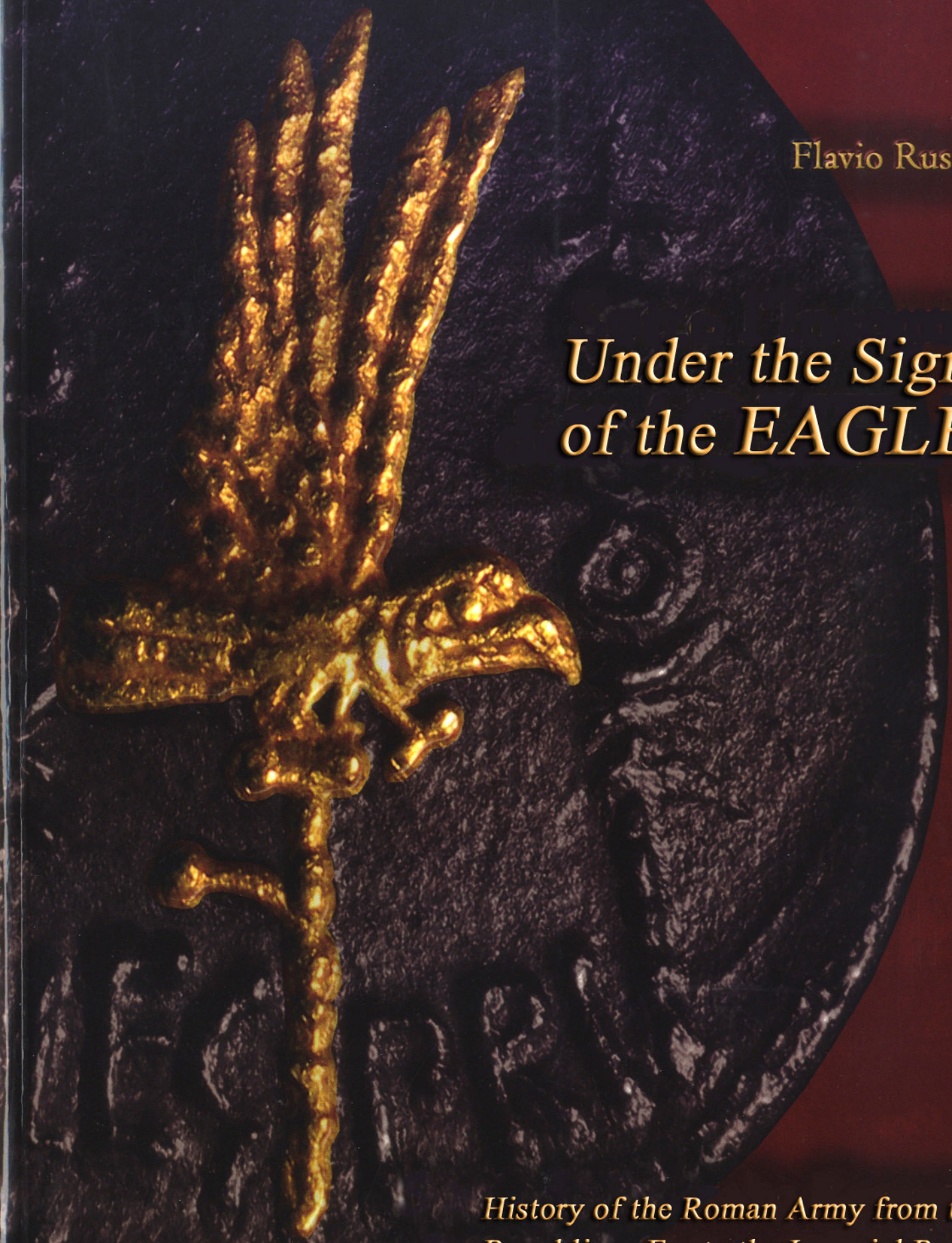

Flavio Russo

Under the Sign of the EAGLE

History of the Roman Army from the Republican Era to the Imperial Rome

Testi e ricerche storiche: Flavio Russo
Ricostruzioni virtuali, progetto grafico, impaginazione e copertina: Ferruccio Russo
Tavole tecniche ortogonali: Gioia Seminario
Traduzione: Jo Di Martino

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UNDER THE SIGN OF THE EAGLE

History of the Roman Army
from the Republican Era to the Imperial Rome

ROMA 2016

PREFACE

There is no doubt that the army, that extraordinary instrument of power, organisation, technology, culture, language and civilisation was fundamental to the development, the extent and duration of the Roman State and of the Roman empire. In the final analysis, it is to the army that we owe the formation of that European and Western civilisation that assimilated and developed so much of the knowledge and spiritual beliefs of the Orient, including Christianity, the majority of this knowledge collected and brought to Rome by its great military fleets and its legions.

It is to the Roman army that we owe some of the most extraordinary monuments of antiquity, such as the great galleries and ports built by Agrippa in the Phlegrean area, the aqueducts, division of property, works of reclamation, channelling systems...an army that generated the nucleus of innumerable cities among the provinces of the empire.

There is no dearth of detailed studies and research on the many different aspects of this complex topic, such as the 1989 book by Yann Le Bohec, *L'esercito romano. Le armi imperiali da Augusto a Caracalla*, translated into Italian, or the work of Michel Feuguere, *Les armes des romains de la République à l'Antiquité tardive*, Paris 1993, 2002, and *The Late Roman Army*, London 1996, by Pat Southern and Karen R. Dixon, in addition to the many well documented exhibits, with striking catalogues, such as the one on the Romans between the Alps and the North Sea, published in Mainz in 2000.

What had been missing until now was an informative book that illustrated both the period and the historical evolution of the Roman army, in all its aspects, with particular and updated emphasis on the technological aspects. This gap, felt in Italy and abroad, has now been filled by the present volume by Flavio and Ferruccio Russo, the continuation of a series on specific topics that has enjoyed great critical and popular success, on particular and often novel aspects of the history, technology and culture of the Roman empire.

The English version allowed for wider circulation, expanding the increasingly narrow boundaries of Italian book publishing and is doubtless a major and much appreciated innovation, even from an editorial aspect. This novelty, together with the quantity and quality of illustrations provided, will most certainly contribute to ensuring a wide readership and appreciation of historical and archaeological knowledge.

Mario Pagano

Superintendent of Archaeological Assets

for the provinces of Salerno, Avellino, Benevento and the Molise

Professor, Universita Suor Orsola di Napoli and the Molise

Under the Sign of the Eagle

PREMESSA
PREMISE

Il mondo noto in età classica secondo Tolomeo, III sec. a.C.
The known world in the Classical Age according to Ptolemy, III c. B.C

Premise

There is much divergence among scholars on the actual dynamics of evolution, although no one doubts its motivating factors. For they all agree that this is the grandiose process that lies at the root of the diversity of the animal species, the result of continuous though imperceptible changes of respective organisms in the course of time. A process that may even be considered as a collective survival instinct of the species to escape the otherwise inevitable extinction determined by changing environmental conditions. The conclusion is obvious: the perpetuation of life on this planet rests on the indispensable presupposition of its continuous adaptation to the existing context. A conclusion that also applies to human institutions, on condition that they are sufficiently lasting to encompass numerous generations, thus assuming the characteristics of an actual biological species. And the longer the period of survival the more applicable is the analogy: a phenomenon perfectly suited to a study of the Roman Army that, in surviving for more than a millennium, underwent an extensive evolutionary process.

It is however indispensable, in order to analyse and define its most salient characteristics, to divide this process into periods and, most important, to review the contexts and the reasons for its various mutations. A procedure that will lead to separate sections of this account, with the principal section coinciding, just as formal maturity coincides with the most lasting existential phase of the species, with the formation of the High Empire, a vast archaeological period that extends from Augustus to Diocletian, after which conventionally begins the Late Empire, the catabolic phase not only of the military institution but of the entire Roman organisation, culminating in its tragic demise.

These different phases of course do not present an equal abundance of sources, nor do they have similar historical relevance. And although it is doubtless interesting to discuss the characteristics of the army of Monarchical and Republican Rome, modest in size and strength, it must be stated that for the former we have only narrations of little reliability, indeed often improbable legends. While the latter, which is sufficiently well documented, it was so strongly conditioned by the numerous transformations of the State and its expansionistic and aggressive policy, that its tactical postures turned out to be so ephemeral and changeable as to make the description of this army highly fragmentary. It is a wholly different matter for the history of the High Empire, when Rome's great territorial expansion came to an end and the mission of its armed force was very simply its defence. At this point the vastness of the State and the availability of human and economic resources required infrastructural and organisational needs of extraordinary complexity that only the military could fulfil and resolve for any extended period, continuously devising the most appropriate defensive methods.

It was perhaps this singular need that led both to the transformation of a military structure of strong Italic connotations into a multiethnic army capable of operating and combating in any geographical context,

Un tratto del Vallo di Adriano, una delle più grandi fortificazioni romane di epoca imperiale.
A section of Hadrian's Valley, one of the largest Roman fortifications of the Imperial Era.

from the torrid African deserts to the icy European forests, and to the development of a body of specialists with the skill to build roads, aqueducts, canals, ports and hospitals, to mention just a few of its systematic achievements. Works that turned the legionnaires not only into engineers but also, and without any recriminations, into manual workers and labourers. From the many workshops of their large bases came bricks and tiles, lead pipes and shut off valves, surgical instruments and launching weapons. And, a detail even more futuristic for the era, these items were mass produced in the thousands, standardised and economical. Their ability to dress and suitably equip an army of almost 500,000 men in uniform will not be seen again until the industrial revolution and the Napoleonic divisions. And when that time did come, it was the same system that was implemented. The result of a coalition of force and ingeniousness!

Colonna Traiana, Roma: scena col ponte di Apollodoro sul Danubio.
The Trajan column, Rome: view with the bridge of Appollodorus over the Danube.

Additional Clarifications

What can an institution established for the purpose of territorial conquest and imperialistic submission have in common with one intended to safeguard a government system so highly varied from an anthropic, economic and legal aspect? Indeed, only the use of weapons, though for diametrically contrasting reasons: a wolf transformed into a watch dog, its size and fangs remaining unaltered! Starting with this last affirmation we can evoke a Roman army that differs from the usual stereotype of brutality and violence, slaughter and victories, deportations and slavery. Certainly these tragic aspects did exist over a period of almost ten centuries, but there was also order and legality, discipline and civility, progress and well-being.

As Corbulon [1] liked to recall, the victory of the legions was always the result of long labour earned more with the mattock than the gladius, more a defence of public works than fortifications. A perfect example is the story of the *Legio VII*, stationed in Spain for approximately four centuries without ever undertaking any combat. But not for this did they remain enclosed in their camp for long periods, as in the *Bastiani* fortress of the *Deserto dei Tartari*![2] On the contrary, it provided firm political support, carrying out tasks of law and order, engineering and civil defence: many of its constructions are still perfectly recognisable today and some are still in working order!

Segovia, Spagna. L'acquedotto romano.
Segovia, Spain. Roman aqueduct.

Though reporting and describing the salient military characteristics of the army of the Monarchical, Republican and Decadence era, our reconstruction will focus more on the characteristics of the Imperial Era. The study will thus extend to the vast range of activities undertaken by the army and that are by far its greatest expression. Taken as a whole, these activities will constitute the cultural and technical foundation of the entire West. Specifically language, laws, currency, measurements and later even religion to mention only a few of the principal contributions, will become the true common factor of the entire Empire, to the extent that even the Christian credo will, from a certain moment on, become its moral buttress and the very source of Western culture. In truth, the new faith did not support the State, even when its soon to come decline became self-evident. If anything, its deep ideological abhorrence of the military institution, widely shared by those enjoying luxury and indolence, accelerated its demise. Thus, for example, wrote Hippolytus in the year 215 concerning the rules to be followed in accepting any new members: "*the soldier under authority shall not kill the enemy. If he is ordered to do so, he shall not carry out the order, nor shall he take the oath. If he is unwilling, let him be rejected. The magistrate who wears the purple, let him cease or be rejected. And if a catechumen wishes to be a soldier, he shall be rejected, for in hating other men, he hates God.*"[3]

This extremely rigid prohibition, lacking any ambiguity, did not long survive for long for in the meantime the general situation was also precipitating, and so the rigid ban was circumvented by claiming that the defence of the Empire was actually the defence of the Church and of Christianity itself. The soldiers would thus be fighting in the name of Christ and when forced to kill the fault would lie with the assailant who had forced them to take this action! But such a hypocritical change of heart arrived too late as the combative spirit, already seriously compromised by indolence and luxury, had been vanquished. Increasingly higher stipends to entice the reluctant and increasingly grandiose and expensive defensive structures attempted to make up for the deficiency in the number of men: solutions that soon led to an exasperated and brutal fiscal policy that further worsened the situation. At the conclusion of its agony, the Empire will not fall because of the pressure of the barbarians, for in actual fact such pressure may not even have actually existed as their arrival was more (as we can easily understand today) a migration than an invasion, and one sufficiently easy to manage and to channel. The end, and on this many scholars agree, was a capitulation to an internal aggression conducted by a criminality that was the direct result of poverty. It was a perverse circuit, a vicious cycle of merciless fiscalism, an arrest of the market and a social repression that, added to an abhorrence of the military activity, increasingly loathsome because of the admission of barbarians into the army that finally led to the collapse of the Western Empire.

A Strange Characteristic

The lack of solidarity between the civilian population and the military component, openly manifest during the Late Empire, displayed its premonitory symptoms as early as the Vulgar era. And probably the first signs of separation between the army and the citizens appear in the wealthy cities far from the frontiers, where from a certain time onward the presence of the legions is perceived as that of an occupation force rather than a defence force. If we observe the perimeter walls of Pompeii, the best preserved of the Ist century and those that, following the catastrophe of Mt. Vesuvius in 79 B.C., appear to have escaped the subsequent habitual and radical requalification, we note a rather singular feature.[4] In many respects it reminds us of the larger Greek city walls, and in fact this structure was mostly of Greek manufacture, where defence was provided by a mercenary force. The political and economic context is the period of the greatest prosperity and dynamism of the Empire, with Europe almost fully subjugated, the Mediterranean reduced to a Roman lake and no enemy ships to be feared: there was nothing that hinted at any

possible enemy attack, from land or sea. Yet the walls of Pompeii have towers that project both outward and inward as well as a double parapet along the communication trench, also facing toward the interior and the exterior, a characteristic that makes the entire structure capable of resisting on two fronts and only slightly less effective in the event of an attack from the rear.

In other words, walls structured in such a manner as to resist sieges against the city from the exterior but also from within the city itself, obviously against its own armed force. The initial explanation for this system is the will to resist to the bitter end: even if the city falls, the walls continue their function, exactly like a Renaissance stronghold. But the analogy is deceiving, as the city walls had neither this function nor this concept: when a city falls, the walls surrounding it no longer have any military purpose or possibility of survival! Leading to the conclusion that the purpose of the double parapet was not to resist on both sides, but to resist possible public uprisings! A loyalty not unlike what the Romans expected from auxiliary units, who not incidentally and in many cases, defected. Over time and with the affirmation of Christianity, diffidence increased rather than decreased, creating a quasi dichotomy between the military world and the civilian world, benefiting neither the institutions, the people, or the Empire.

A Minimum of Clarity

For centuries now we have been saying, with the nostalgia typical of those on the decline, that the inhabitants of Italy are the direct descendants of the Romans, the good-natured grandchildren of aggressive ancestors. In reality the only aspect we would seem to have in common is geographical. In his meticulous study of southern Italy [5], Giuseppe Galasso makes a number of correlations and reaches the conclusion that the great majority of its current population is the direct descendant of the people that inhabited the very same districts in the VI century A.D. In other words, after the dissolution of the empire and following the conspicuous migrations of the barbarians. Considering that in the VI century the population of the south and of a good part of the rest of Italy was the population that had survived the Roman conquest and, especially, the servile class of the landed estate, it is absurd to search for Roman characteristics from that most humble assembly. Which leads to a second conclusion: if this occurred in the most tormented area of the peninsula, occupied and colonised repeatedly from the north by progeny of Germanic origin and from the south of Arab origin, the persistence of such characteristics would be even stronger in the European regions. It is thus logical to suppose that the human legacy of the Roman army, more behavioural than physical, would be more obvious in the territories contiguous to the great limes, where the great legionnaire contingents were stationed for centuries, leading to a significant ethnic evolution. It such case, it would also be plausible to venture that the mythical Prussian militarism did not descend directly from a Teutonic order but may be the final derivation of the legions, as seems to be suggested by its combat and territorial control tactics.[6]

This is nothing new, at least in general terms, but it is in observing hereditary features that we can glean an even tenuous idea of the character of ancestors, and ours were of a completely different origin and nature. Our greater propensity toward juridical disciplines, the religious and ideological sophism for which our peninsula has always been the cradle and our modest response to violence and supine acceptance of foreign aggressions, often presage of lengthy dynasties, are indirect confirmation. With such a foundation, not necessarily negative in its consequences, our historiography is doubtless the most appropriate for cultural, geographic and linguistic reasons to trace a historical picture of the Roman army but, at the same time, the least suitable to penetrate its mentality and underlying logic. And, regrettably, because of our renowned aversion to technical disciplines, it is also the least able to comprehend the re-

levance and variety of the initiatives and activities of the legions in every corner of the Empire that facilitated the progress of civilisation. For these reasons it comes as no surprise that the majority of research is German, British, French and often even Spanish and that we limit ourselves, in the best of hypotheses, to simply translating their analyses. Not even our language, which more than any other neo-Latin language resembles the ancient one of the Romans, was sufficient incentive to undertake more accurate and serious inquiries on the activities of this grandiose institution. A deficiency that leads to obvious technical approximations and serious formal improprieties, deleterious for any scientific study but intolerable when one considers our close etymological affinity. For this reason and to attempt a different approach to this topic, it seemed fitting to begin with an etymological analysis of the words and definitions that will be used frequently in this chronicle and that are too often confused.

Meaning of Army

Etymologically, it is very clear that this word has remained unaltered in Italian: the word *esercito* coming from the Latin *exercitus* which, in turn, comes from the verb *exérceo* meaning *addestro* (I train), *tengo in esercizio* (I maintain in exercise). Up to this point everything seems logical and normal, justifying those who perceive in this word a distinctive peculiarity of our armed force. The word in fact does not refer, as was the case with the majority of other nations, to the destructive logic of weapons, as does *Army*, for example, for the United States and Britain and *Arme'* for the French, but to the peaceful example of exercise, of work. A concept that confirms the primacy of technical capability over the use of arms.

Not stopping, however, at appearance, in this case to the sole Latin etymon, in endeavouring to identify the more archaic term from which it derives it does not escape us, to remain with Latin, that the verb *esercitare* is composed of ex meaning *fuori* (out) and *arcére* meaning *spingere* (to push), giving the meaning *spingere fuori* (to push out), *far uscire* (to let out), *stimolare* (to stimulate) and, in a wider sense, *far lavorare* (cause to work), *sollecitare* (to solicit), *stancare* (to tire) and finally also *addestrare* (to train). This, far from confirming the preceding etymology, places it rather in doubt, as it is not clear what could be meant by *spingere fuori* (push out), or who and from what should be made to get out.

For other scholars the explanation is innate in the fact that it does not derive from the verb *arcére* but from the noun *arce*, which means *fortezza* (fortress), *rocca* (stronghold) from which we get our *arca* (arc): in such case the meaning would be *fuori della rocca* (outside the stronghold), *fuori della fortificazione* (outside the fortification) and by extension all those who are conducted outside of the defences, obviously to confront the enemy. A meaning that is doubtless more fitting. To further strengthen this second theory we have the etymology of *arco* (arch) deriving from the Latin àrcus having the generic meaning of arma (weapon or arm), from which descended *àrceo, respingo il nemico* (I thrust back the enemy), obviously using arms. And here we are back to the starting point, as we easily deduce the comprehensive meaning of an active defence conducted with the use of arms: a concept fitting to the Constitution, but far from the above edulcorated interpretation. In any event the concept of the use of arms is present even in the etymon of *exercitus*, *esercito* (army), then as now!

The meaning of legion

The Latin etymology of legion, *legio-legionis*, comes from the verb lègere meaning *raccogliere* (to collect), *adunare*(to assemble) and *radunare* (to convene). The Latin *lègere*, that for us becomes *lèggere*, derives in

turn, like the Greek word of the same period *lèg-ein*, from the root *lag=leg*, meaning *adunare* (to assemble), *raccogliere* (to collect), *vagliare* (to examine). By reading the individual alphabetic symbols together we obtain the correct phonetic pronunciation of the entire word: by examining the individual men, that is, selecting and convening them, they attained the correct military formation of legion. The meaning thus indicates that introduction into the legions was neither automatic nor taken for granted, nor was it a mass entry as with medieval units where the only requirement was quantity. That acceptance was, instead, a sort of social promotion, a desired recognition that remained such for many centuries, almost a qualification without which the most prestigious political and administrative careers would have been definitively precluded.

Meaning of Army

The term has always indicated a large formation of warships, a sufficient number of large ships to compose a line of battle. It has now been replaced by the word *fleet*, a word with no etymological origin either in Greek or Latin. According to Guglielmotto, the members of the armada are admirals, captains, officers, commanders, *sailors*, skilled labour, crews, rowers, machinists, in effect anyone who has any connection with the sea, with ships, their equipment and their machines. Very recently, beginning around the second half of the XIX century, the word 'armada' also began to be used to indicate the army, or a large part of the army, causing confusion when reading classical works.

Meaning of Soldier

Even though this word also has an obvious etymological root in the Latin word *sòlidus*, soon to become *sòldus*, or wages, a definition adopted at the time for gold and silver coins because of the solidity of their value, the word was not used in the military context until the modern era. The word *soldato* (soldier), in fact, comes from the Spanish *soldato* [7], which defined a person who was *as-soldato* (recruited) for tasks that were only marginally and partially inherent to armed defence. In other words, a paramilitary assigned to auxiliary tasks and lacking, by definition, the dignity of being an actual member of the military.

The qualification of soldier appears in Italy for the first time among the garrisons in the coastal towers of the kingdom of Naples [8], when two or more *soldati* were placed alongside a Spanish corporal, who assumed command of the garrisons by royal patent and with the pompous title of *castellano*. Appointed and recruited by the nearby universities and paid by them only for the summer, they were, in effect, seasonal workers, an anachronistic defi-

Vietri, Salerno. Torre Crestarella.
Page to the side: Erchie, Salerno. Towers of Erchie.

nition for the legionnaires of the Roman army, of whatever role, rank or period of service, even after the systematic payment of the *stipendium*, initially a government contribution to the *adsidui*, soldiers who had to extend their period of service to the winter season because of wartime requirements. As for the meaning of the word *stipendium*, closely related to our own *stipendio* (stipend), the word comes from *stips-stipis*, a small copper coin of little value. Logical to conclude that originally the service was not paid and that when and if there was any sort of remuneration this was a very modest allowance to alleviate the burdens of the less affluent. From a historical perspective and according to tradition, the military stipend was introduced during the siege of Veii, which lasted from 406 to 396 B.C. This was apparently an expedient not intended to be systematically adopted, but the transformation of war from an annual and seasonal event to something constant and continuous, soon made it indispensable.[9]

Meaning of Military

Once understood that it is not correct to define the members of the Roman army as *soldati*, what terms were then used to define its conscripts and more important, why? All sources concur on a single word, *miles*, or *milite*, a definition adopted only to a limited extent perhaps because it appears to apply more to paramilitary formations - highly ideological bodies ill inclined to submission to the State, having little in common with a national army. For some authors the difference between militia and army is in the temporary nature of the former and the permanence of the latter. In other words, a formation that comes together in view of a battle or a seasonal campaign and that disbands upon its conclusion is always a militia. But one that remains permanently in service, independent of whether it is a period of peace or war, is considered an army. Viewed from this perspective, all the armies of antiquity, including the Roman one, were first militia and only later, and not always, did they develop into armies. This distinction would explain the reason for the protracted use of the word milite for legionnaires, even when they were no longer such but had become what is better defined as *pedites* or foot-soldiers. But for the Romans, a *miles* was the military member in the fullest meaning of the word.

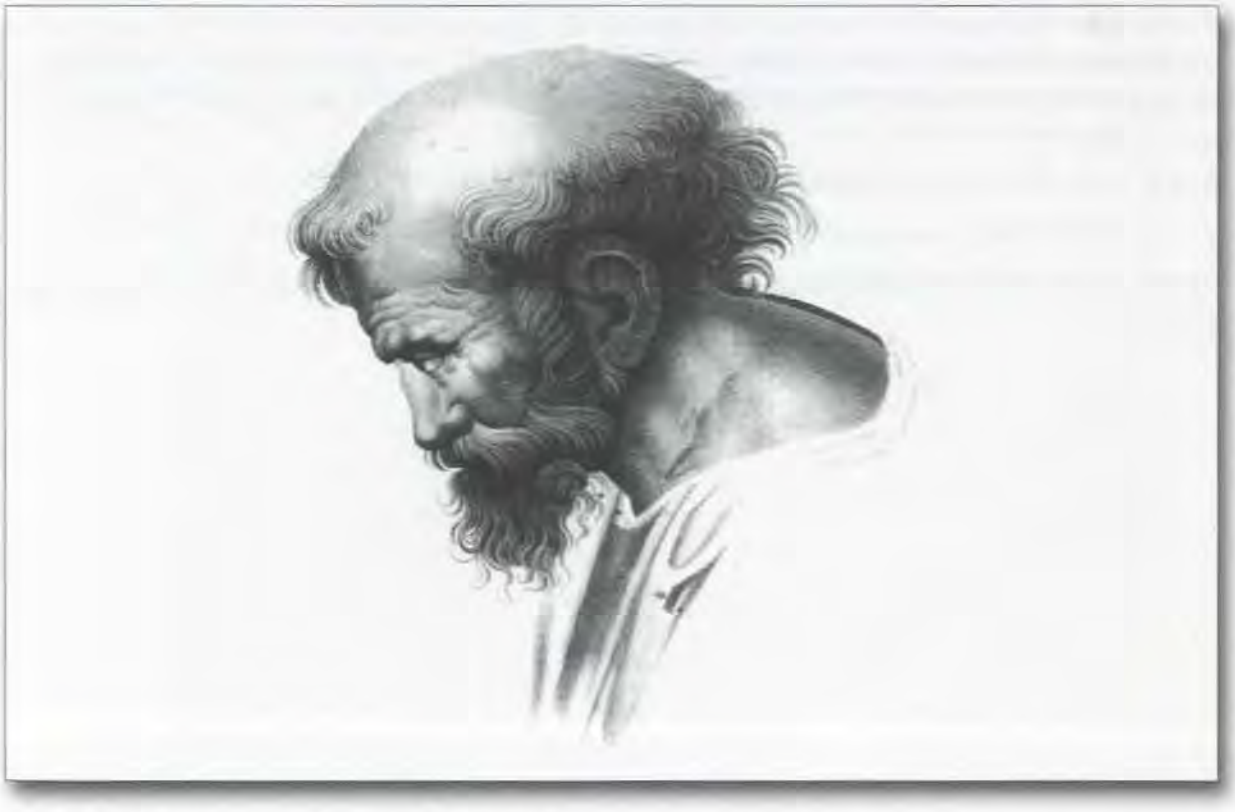
Concerning the etymology of the term, many scholars tend to believe that the word goes back to the very first institution of the army, formed by Romulus by selecting one thousand men from every tribe. According to this theory, every member was *unus ex mille, uno dei mille* (one of a thousand). Other scholars hold to a contrasting theory, that is, that the root of the word is mil, meaning convene, unite, with the addition of *item* as participial ending of the verb *ire* (to go), thus to convene a moderate number to go, to *move*, to *march*. In such case, mille would come from the word for unite, in the sense of a multitude!

Much clearer and probably more applicable is the following socio-etymological contention on the comprehensive meaning of militare. That the word comes:"*from the Latin miles, militis, is obvious; but where does miles come from? The more informed texts cite the word milleria, a tactical unit of the Roman army during the first period of the Monarchy (753-510 B.C.) that supposedly consisted of one thousand men: from this number therefore, the name.*

And what is a number? Today it is no more than a pure and simple indication of quantity; but such was not the case for our ancestors who considered a number as the synthetic expression of certain truths or laws, whose ideas were found in God, in man and in nature (that is, in the sky, the earth and in the mediator between these two, for such is man by divine will). In other words, numbers were sacred mathematics, its cradle being ... Chaldea; from here it probably passed to Egypt, into Palestine, to the Greek world and, finally, to the Italic peninsula where its greatest and best known proponent was Pythagoras of Samos (VI century B.C.).

It is almost impossible to provide a synthetic explanation of this highest and most archaic of philosophies; but we can give an example that may serve also – and especially – to explain the true meaning of the number mille (one thousand), and thus of the word miles. Let's try.

One is God, the prime Being, the creator of all, from whom all originates and emanates. The numbers that follow - those from two to nine – are nothing more than the various aspects of the manifest and material world. Nine is followed by ten, the number that ... expresses the level known as 'animate matter' and whose productive activity is manifested in the numbers between eleven and ninety-nine. Ten means therefore that God is within us, in our matter. Further up, beyond the material level, there is another level in man, that of the spirit, the site of feelings and of the mysterious Vital Force, that subtle fluid that the Ancients believed to be in the blood ... In numerical terms, we are now on the level of hundreds – that is, the numbers from one hundred to nine hundred ninety-nine – where all originates from ten to the second power (ten squared equals one hundred). One hundred, which means – as we now know – God is within us, in our spirit. Similar arguments are also valid, obviously, for the number one thousand (one thousand equals ten to the third power) which, in the language of sacred mathematics indicates that God has also penetrated the soul of man, the third and last –and highest - component. Therefore, purification, the spiritual catharsis of man, has been accomplished three times: at ten it conquered matter, at one hundred it becalmed passion, at one thousand it sublimated the spirit. Thus every obscure trace of instinct has now disappeared, and all in him is candid and resplendent: the warrior is thus dedicated solely to an idea and is ready to enter the field and to fight as a miles who is part of the milleria. The terms miles and milleria qualifying not physical force as such (that of one man in one case and of a thousand in the other) but a pure spiritual and animistic power, the highest level man can hope to reach ..."[10]



Portrait of Pythagoras, from an XVIII century German print.
Page to the side: Vatican City, Vatican Museums. Raffaello Sanzio, The School of Athens, 1509. Lower left hand corner, Pythagoras.

Notes

1 - On Gnaeus Domitius Corbulo cf. P. C. TACITUS, *Annals*, books I-VI. For a more detailed report on his military activities cf. M. A. LEVI, *L'impero romano*, Torino 1967, vol. I, pp.285-303.

2 - Cf. D. BUZZANTI, *Il deserto dei Tartari*, ed. Milan 1940.

3 - Quotation is from U. BROCCOLI, *L'inferno in terra*, in ARCHEO, n°11, November 2007, p.103.

4 - Cf. F. RUSSO, F. RUSSO, *89 a.C. Assedio a Pompei*, Pompeii 2005., pp. 64-69.

5 - From G. GALASSO, *L'altra Europa*, Milan 1982, pp.19-25.

6 - Cf. F. L. CARSTEN, *Le origini della Prussia*, Bologna 1982, pp. 19-21.

7 - Cf. R. A. PRESTON, S. F. WISE, *Teoria sociale della guerra*, Verona 1973, pp.133. Additional information cf. R. PUDDU, *Il soldato gentiluomo. Autoritratto di una società guerriera: la Spagna del Cinquecento*, Bologna 1982, pp. 145 and foll. By the same author, *Eserciti e monarchie nazionali nei secoli XV-XVI*, Florence 1975, pp. 27-34.

8 - Cf. F. RUSSO, *Le torri anticorsare vicereali*, Naples 2001, pp. 185-192.

9 - Cf. J. WACHER, *Il mondo di Roma imperiale*, Bari 1989, p. 88.

10 - From G. CERBO, F. RUSSO, *Parole e pensieri. Raccolta di curiosità linguistico-militari*, Roma 2000.

PART ONE

The Legions of the Monarchy

L'area sotto il controllo di Roma nel 510 a.C.
The area dominated by Rome in 510 B.C..

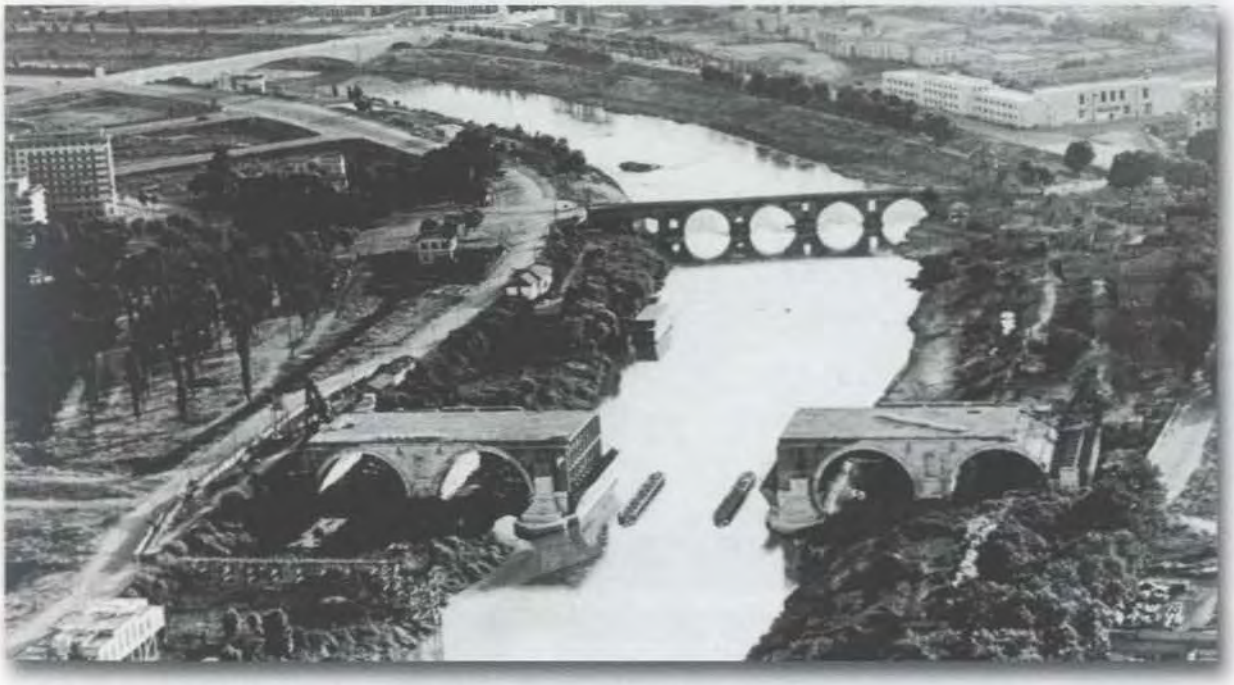
At the origins of Rome

A military organisation presupposes the existence of an urban or state system, one that is well defined throughout the territory, for without this mandatory definition the 'organisation' would be not more than an ephemeral formation of raiders and marauders. Obviously Italy did not escape this subordination and so it is correct to speak of armies in Italy only after the founding of their respective cities, which the difficult morphology of the country placed at the mouths of rivers. Not so distant from the sea as to lose its advantages nor so close as to fear incursions! In his monumental *Storia di Roma antica*, Mommsen describes the territory where the city par excellence would be founded as:"*approximately three miles from the mouth of the Tiber, hills of moderate elevation rise on both banks, higher on the right, lower on the left bank. With the latter group there has been closely associated for at least two thousand five hundred years the name of the Romans. We are unable, of course, to tell how or when that name arose; this much only is certain, that in the oldest form known to us the inhabitants of the canton are called not Romans but Ramnians (Ramnes), and this shifting of sound, which frequently occurs in the older period of a language, but fell very early into abeyance in Latin, is an expressive testimony to the immemorial antiquity of the name. Its derivation cannot be given with certainty, possibly Romans may mean 'the people of the stream'. But they were not alone on the hills by the banks of the Tiber. A trace has been preserved of the division of the ancient Roman citizenry, indicating that the body rose out of the fusion of three groups once probably independent, the Ramnians, the Tities and the Luceres, that then became an independent republic; out of such a synoikismos as that from which Athens arose in Attica.*"[1]

The author makes another interesting observation concerning this site and that is that he considered it incorrect, in the case of Rome, to speak of a founding similar to that of any generic city, as narrated in legend, since it was not built in a day. And he believed it to be highly significant that Rome earned such a pre-eminent political position in Latium so rapidly, when the difficult characteristics of its territory would suggest the opposite. A soil that was much less fertile and less healthy than that of the majority of other ancient Latin cities, one that was poor in springs and devastated by the frequent overflows of the Tiber.[2] On the other hand:"*no site was more suitable than Rome, both as the trade centre for fluvial and maritime Latin commerce, and as the maritime stronghold of Latium, because it had the advantage of a strong position and an immediate vicinity to the river; it commanded the two coasts up to the mouth of the river and was equally favourable and comfortable to the navigators of the river, descending from the Tiber and the Aniene, and those of the sea, given the mediocre size of ships at the time; a site, finally, that offered greater shelter from piracy than other sites located on the coast itself.*"[3]

Considering that the Tyrrhenian from the Straits of Messina upward has very few natural ports that could fulfil the needs of ancient navigation, this interpretation appears extremely likely and sufficient to justify a settlement in an unfortunate environmental context, with swamps and marshes to the south and

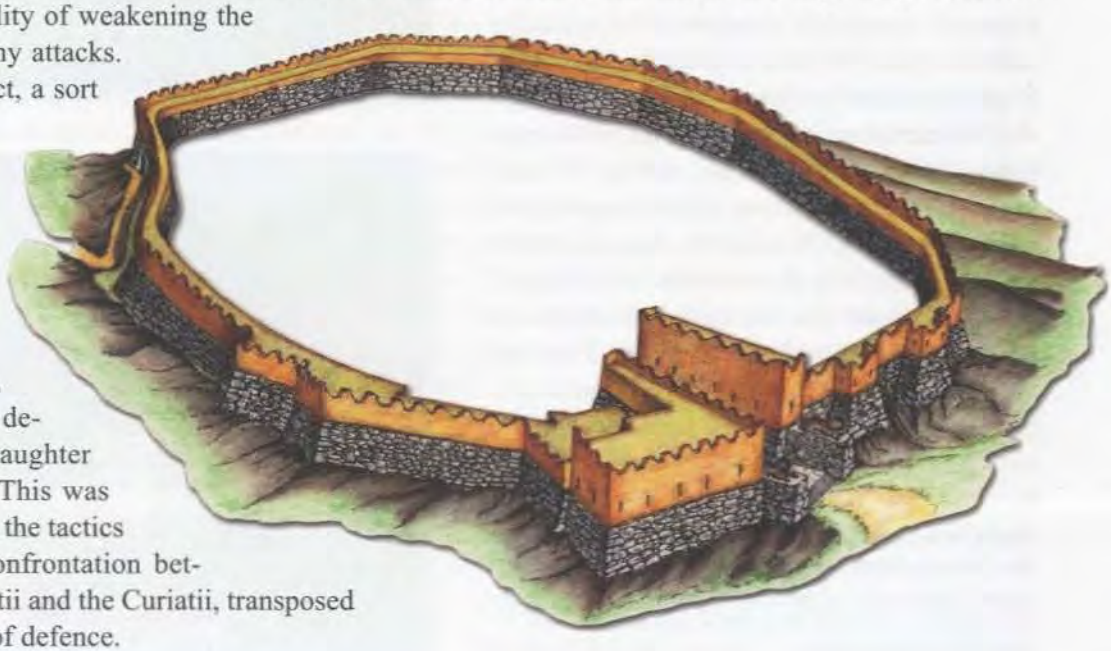
Plastico delle capanne dell'età del Ferro ritrovate sul Palatino, VIII sec. a.C. Roma, Museo della Civiltà Romana.
Relief models of the huts of the Iron Age found on the Palatine, VIII c. B.C. Rome, Museum of Roman Civilisation.



Veduta aerea del corso del Tevere nel 1939. Archivio del Museo Aeronautico Caproni.
Aerial views of the Tiber in 1939. Archives of the Caproni Aeronautical Museum.

north, as it was the only satisfactory landing place from Gaeta to Civitavecchia. In other words, Rome appeared to reproduce in miniature the destiny of Troy, a city-fortress located near the mouth of a river, ideal for the control of merchant shipping.

A strategic choice that reveals the militaristic and imperialistic matrix of the city from its very beginning. Thus: "*in this sense, as confirmed by the legend, Rome may have been a city that was created rather than developed, and of the Latin cities, the youngest rather than the oldest...it is not possible to guess whether Rome came to life because of a decision made by the Latin league, or because of the genial idea of a forgotten founder of the city, or due to the natural development of commercial conditions.*"[4] Accepting the theory as valid, it is interesting to note that the most frequently adopted fortification for hill settlements, typical of the era, consisted of a rampart running around the top or along its slope, not necessarily closed, and constructed of large stones installed dry. The solidity of the structure, defined in technical terms as polygonal, cyclopic, megalithic or pelagic, derives from the inertia of the blocks of stone, while its defence capability was based on the possibility of weakening the waves of enemy attacks. It was, in effect, a sort of grand staircase that could not be ascended rapidly and contemporaneously en masse, allowing the defenders to slaughter the attackers. This was very similar to the tactics used in the confrontation between the Horatii and the Curiatii, transposed into a system of defence.



Archaic Settlements of the Latium

If the perimeter fortification had to be similar to the one described above, the settlement of primitive Rome could not, in turn, differ greatly from the primary urbanistic plan used throughout the Latium region of the era. In detail:"*in order to place themselves in a stronger position, these primitive centres often exploited the natural conditions of the terrain, settling on the heights of steep and rocky crags that could easily protect them ...Such a fortified town would be located at the confluence of two trenches, forming a triangle or rectangle, with two or three sides naturally protected, leaving only the last side, where the hill continued upward, to be defended. Using the favourable conditions of the terrain, like a dominant cliff or the convergence of small lateral valleys, the hill was isolated by a barrier that usually consisted of a wall and a ditch. We know of many of such òppida and the same system was still in use during the Republican era.*"[5]

This type of fortification was substantially and widely used even where the geologic conformation of the hill was calcareous rather than tufaceous, a common feature along the central Apennines, the area settled by the Italics. Such fortifications were generally described as arx [6], a name perfectly fitting to the already mentioned etymology of army. There is also a curious coincidence innate to this type of fortification: its initial defence, and the most lethal, was to hurl spears and javelins against the hordes attempting to climb the slopes, to the extent of considering such a tactic as complementary to that structure. The two largest ethnic groups that contended extensively for military supremacy, the Samnites and the Romans, both took their name from the spear: quiriti in fact means the people of the spear, and *samnites* the people of the *sannia*, a squat Italic javelin.[7] Reference to the spear is also found in several other Latin terms such as *populus*, similar to *popolari=to devastate*, found in the ancient litanies called *pilumnus poplus*, the militia armed with a spear, also called *pilus*.

Legend and Tradition

According to tradition, the period of the Roman monarchy, that of the famous seven kings on the seven hills, extends from 753 B.C. to 509 B.C. The likelihood of such a dynastic evocation can be demonstrated by a simple division [8]: each king would have had to reign an average of 33 years, a rather significant period to say the least! In reality, and following the destruction of the few written sources during the Gallic raids of 390 B.C., the origins of Rome remained enveloped in mystery. During the Augustan era, such writers as Livy attempted to mitigate this mystery by reconstructing, or better yet, theorising what would have been a suitable past for the city. Legend was thus replaced by myth, without the least changing the historical unreality, though narration did at times adhere to specific crucial events. But if the evocation is not fully credible, neither is it completely false, since it does appear that there was a Monarchy between 500 and 450 B.C. And it is also likely that there was a phase of Etruscan domination that, based on archaeological evidence, probably dates to around 600 B.C., coinciding with the paving of the forum to cover the sewer network.[9]

But evidence aside, Roman historians attributed the founding of the city and the monarchy to Romulus: according to tradition, he was the nephew of Aeneas, the direct genetic link between a city that was already legend and one that was destined to become one. Who better than he could have been its first king? Less prosaically it appears all too obvious that the first four kings are a synthesis of mythology and popular narration relating to heroes who had certainly existed, with historical inventions providing illustrious genealogies to the principal families of Rome. This strange combination of antithetical figures is

Roma, la Cloaca Massima: manufatto di sbocco sotto l'argine del Tevere.

Rome, the Cloaca Maxima: drain channelled underneath the banks of the Tiber.

sufficiently suspect: Romulus, for example, is the warrior sovereign immediately balanced by Numa, the pacific sovereign. A similar contrast is found in the subsequent pair of sovereigns, Tullus Hostilius and Ancus Marcus.[10] One cannot ignore the Etruscan matrix of the Romulus' founding ritual [11], the famous trench traced by a plough with bronze ploughshares. Perhaps it is this very detail that cloaks the intimate connection between the nascent state and the older contiguous and mysterious one of Etruscan origin. It is no coincidence that the last king of Rome is remembered as an Etruscan and his expulsion, for some scholars, could symbolically represent the city's liberation from that archaic dependence. Certainly:" *with the advent of the Etruscan dynasty we enter upon more solid ground ... It is significant that two of the works attributed to the Etruscans – the bridge over the Tiber and the port of Ostia – were conditions necessary to progress and commerce. For it was during this period that Rome was transformed into a city. The draining systems, the defensive perimeter walls, the construction of temples and the constitutional reforms attributed to this period, are all symbolic of the most important aspect of urban growth. Rome learned from the Etruscans the principles of architecture... from the Etruscans it took also the community and military organisation of Rome. One could say that the century of Etruscan domination transformed an isolated settlement ... into a military state with a strong central power.*"[12]

The bonds that link the two civilisations, confirmed by archaeology, were and remained numerous. A relationship similar in many respects and in more general terms with that of Italic peoples populating the peninsula, and so one might justly suppose a general consanguinity: many cousins children

of few brothers! According to the ancient historians, Romulus founded the city, while for many modern ones he simply limited himself to unifying into a single organism a plethora of small villages called *pagi*, huddling on the various hills that emerged from the enormous swamp of the middle course of the Tiber, swamp that a series of drains about a hundred kilometres in length, attempted to reclaim for centuries. The celebrated French scholar De La Blanchere maintained in some of his works, published in 1882, that without those drains, consisting of very narrow passages, Rome would not even have existed![13] A confederation of numerous settlements that initially appeared to be homogeneous, inhabited by as many tribes, confirmed by the least likely tradition.

Sopra: *interni di cunicoli di drenaggio: Faicchio (BN) e Veio (LT).*
Sotto: *Roma, interno della grotta sotto la Domus Aurea.*

Above: interior of the drain passages: Faicchio (BN) and Veii (LT).

Below: Rome, interior of the grotto underneath the Domus Aurea.

Almost as if to confirm this fact, the hill that witnessed the infancy of Romulus and that later became the site of the imperial residence, the Palatine, has restored the most ancient settlements, some dating to 800 B.C., to archaeological excavations. Recently identified was the grotto where, according to tradition and in that historical period, the wolf milk-fed the two twins, a winding gorge richly decorated during the Augustan era.[14] Also dating to the same era are the villages on the Quirinale, the Esquilino and the Viminale hills, villages that the rough morphology of the sites, with its deep incisions and wide marshes had long kept totally autonomous and separate, though not distant. We cannot exclude that the reason for the closer contacts among the different settlements and their eventual unification into a substantial residential unit of moderate size, was determined not so much by the will of Romulus as by the increase in the population. When this fusion did take place, Romulus made use of the critical human mass to organise the archetypical regular armed force of Rome.

THE ROMULEAN ARMY: SIZE AND RECRUITMENT

Bronzetto votivo a figura di guerriero (600 a.C. ca.). Siena, museo archeologico.

Bronze votive sculpture of warrior (circa 600 B.C.). Siena, Archaeological Museum.

It is very probable that the form chosen for that initial embryonic army was Etruscan, or that it was at least inspired by the Etruscans. But much time was needed before it could truly resemble that model, thus when we refer to the Romulean army we mean an organisation that dates to an earlier period. Certainly:"*concerning Rome we know from sources that its oldest army, like that of other cities and populations of the peninsula, was associated with the aristocratic structure of the State: the original thirty districts (curiae) into which were divided the inhabitants according to their membership in the tribes of* Tities, Ramnes, Luceres, *each consisting of ten curiae, were able to provide ten horsemen and one hundred foot soldiers each, for a total of 3,300 men. The ratio of one to ten between cavalry and infantry is indicative of the social differentiation between the agrarian aristocracy and the middle class that was able to procure arms: lesser landowners, artisans, merchants. One might say that in this phase the cavalry, the basis of the oldest military organisation, still played a significant role. The command belonged to the king, who used subordinate commanders, perhaps the tribuni celerum (horsemen were called celeres), later proven to be three in number, one for each of the genetic tribes. Nothing has come down to us of the armament and the methods of combat, but we presume that they were already similar to those of the hoplite phalanx, consisting of heavy bronze armour for personal defence, introduced into Italy from Greece and the Orient. The wars of the time continued to be, as in the tribal era, in the form of raids and assaults carried out by conscripts..."*[15]

Cavaliere greco. La cavalleria cominciò ad avere una parte importante nelle guerre greche a partire dal V sec. a.C.

Greek horseman. The cavalry began to have an important role in Greek wars beginning in the V century B.C.

Nor do we have any reliable sources concerning the system used to select and recruit members during the Monarchy and, as Roman historians were not familiar with it, we can only describe it in very general terms. Apart from the division by tribes, the true subdivision, as already mentioned, was based on the curiae that appear to have been instituted at the time of the founding of the city. Each of the three original genetic tribes had ten curiae, also defined as *commune*, and provided one hundred infantrymen and ten mounted horsemen, as well as ten counsellors - the future senators. This is probably the reason that in the most ancient Roman tradition

there were thirty curiae, thus three hundred senators, three hundred horsemen and three thousand infantrymen. A schematic division that was probably common to all people of Latin descent.

This tripartite division was also reflected in the senior ranks of the Roman army, in this case the units destined to field battle rather than simple defence of the walls. The three hundred cavalrymen were commanded by three *tribuni celerum*, and the three thousand infantrymen by three *tribuni militum*. To this we also must add a judicious number of soldiers with light arms who fought outside of the ranks, often using only slings or bows and arrows. In conclusion, that first army appeared to have deployed a corps of over 3,000 *pedites* and 300 *celeres*, provided respectively in the thousands and in the hundreds by the three original tribes. But only those three thousand and those three hundred were given the name of legion or had its archetypical connotations, as their number was relatively modest. We imagine that it was a:"*purely patrician force. The flow of new inhabitants from the nearby hills, and their organisation into new tribes, transformed it into a prevalently plebeian army, at the same time increasing its dimensions.*

This organisation was traditionally attributed not to the Tarquinians (Tarquinius Priscus and Tarquinius the Superb) but to Servius Tullius, the intermediate king between the two"[16]

The Servian Reforms

Tradition, which even in the period immediately following remains the sole source available to us, attributes the first reform of the Roman army to Servius Tullius. But modern historians have some strong perplexities in this regard and tend to postdate the reform, considering it more plausible in the Republican Era, around the middle of the V century B.C. This uncertainty is very evident in Mommsen, who claimed that the reform of its constitution, attributed to king Servius Tullius, has an altogether uncertain and problematic historical origin, no different from any other event occurring in an era for which we have no specific sources or objective evidence, but only deductions resulting from a study of subsequent institutions. Nevertheless, the tenor of this reform seems to exclude any participation by plebeians, to whom it imposes only duties and no rights. It seems rather to be the product of the wisdom of one of the Roman kings or the insistence of the citizens to be released from exclusive military service.[17]

Indeed the stimulus for the reforms appears to have issued from the need to equate the citizen's role in the army to his role in society, a need that was not favourable to plebeians, as they had no role at all! Thus was the class-based role of the final matrix, a role that satisfied the demands of the small landowners by sanctioning the principle of proportionality between the two existential spheres of the State, a principle in which one could enjoy the privilege of bearing arms only if he had property that might be lost in case of defeat. With the *Servian* reforms, the political role and the military role of every citizen was based on the single parameter of the citizen's status within the patrimonial hierarchy. But this type of reform cannot be viewed simply as a banal conciliation between the pressing military needs of the State and the actual economic resources of its citizen! Certainly some such concerns did exist, as one could not ignore the fact that the maintenance of a horse or the purchase of a complete political panoply lay outside the financial resources of the majority of citizens, but it was only later that the existence of such resources became predominant, when there began to emerge a reluctance to help the community, considering as an unwelcome obligation what had heretofore been viewed as a privilege.[18]

With the Servian reforms, and with all the aforementioned reservations, the army was transformed from a curiata organisation, not wholly suppressed, to the centuriate order, from the word century. For

purposes of conscription, Servius Tullius divided the territory that formed the State at the time into districts or tribes, of which four were urban, named after its most important districts - Suburana, Palatina, Esquilina, Colina - and sixteen rural, the names taken from the families that had the largest properties therein. Thanks to these innovations, the city underwent an immediate and vigorous development, made even more significant by the demographic increase caused by integration with the numerous immigrants attracted, as always, by the possibility of well being and work that Rome offered. Perhaps it was exactly these new potentialities that allowed Tarquinius the Superb to initiate a policy of expansion and primacy in Latium.[19]

The new order of the *comitia centuriati* placed the power of the military in the hands of the most prosperous members of society, deciding rank on the basis of wealth for classification within the army. For this purpose the entire male population able to bear arms was divided into five classes. The highest rank included citizens who could serve on horseback, and therefore made up the mounted militia or cavalry (*equites*). According to Livy:"*with the citizens who had an income of one hundred thousand asses or more eighty centuries were formed, forty of seniors and forty of the young, collectively called first class; the seniors were to be prepared to defend the city, the young to fight outside the city; as armour they were prescribed a helmet, the clipeus, greaves, the cuirass; these arms, made of bronze, were to be used to defend the body; the offensive weapons were the spear and the gladius.[...] The second class consisted of those who had an income between one hundred thousand and seventy-five thousand asses, and these, including the seniors and the young, formed twenty centuries; the arms prescribed were the shield instead of the clipeus, and, except for the cuirass, the same arms as the first class. Members of the third class had a minimum income of fifty thousand asses; the same number of centuries were formed, also divided according to the same age criteria; as for the weapons there was no difference except for the elimination of the greaves. For the fourth class, the estate was twenty five thousand asses; again the same number of centuries were formed, but with different weapons: they were prescribed only the spear and the javelin. The citizens of the fifth class were more numerous and so formed thirty centuries; they carried slings and stones for hurling [...]. The wealth for this class was eleven thousand asses. The remainder of the population, having an income of less than eleven thousand, formed only one century and was exempt from the militia. The infantry thus armed and ordered formed, along with the notables of the city, twelve centuries of cavalry soldiers; he also created another six centuries, in place of the three created by Romulus, keeping the same names they had had upon their constitution consecrated with the auguries. To buy the horses, the public treasury paid ten thousand asses. All these costs fell from the poor to the rich. But they had greater political rights. Suffrage in fact was not granted indistinctly to all, giving all the same power and the same value, as was the custom since Romulus and continued by the other kings; rather a priority was created so that no one appeared to be excluded from suffrage, but the authority was practically all in the hands of the notables. The first to be called to vote were the cavalry, then the eighty centuries of the first class; if an agreement was not reached – which rarely occurred – the members of the second class were called, but they never descended so far down as to arrive to the last class.*"[20]

Economic and Social Aspects of Servian Reforms

From a purely military aspect, male citizens suitable to military service, of an age between 17-18 years and 60, were all subject to military service, whether they were Romans, foreigners or freedmen, on condition that they had property in Rome. And according to their economic worth they were to arm

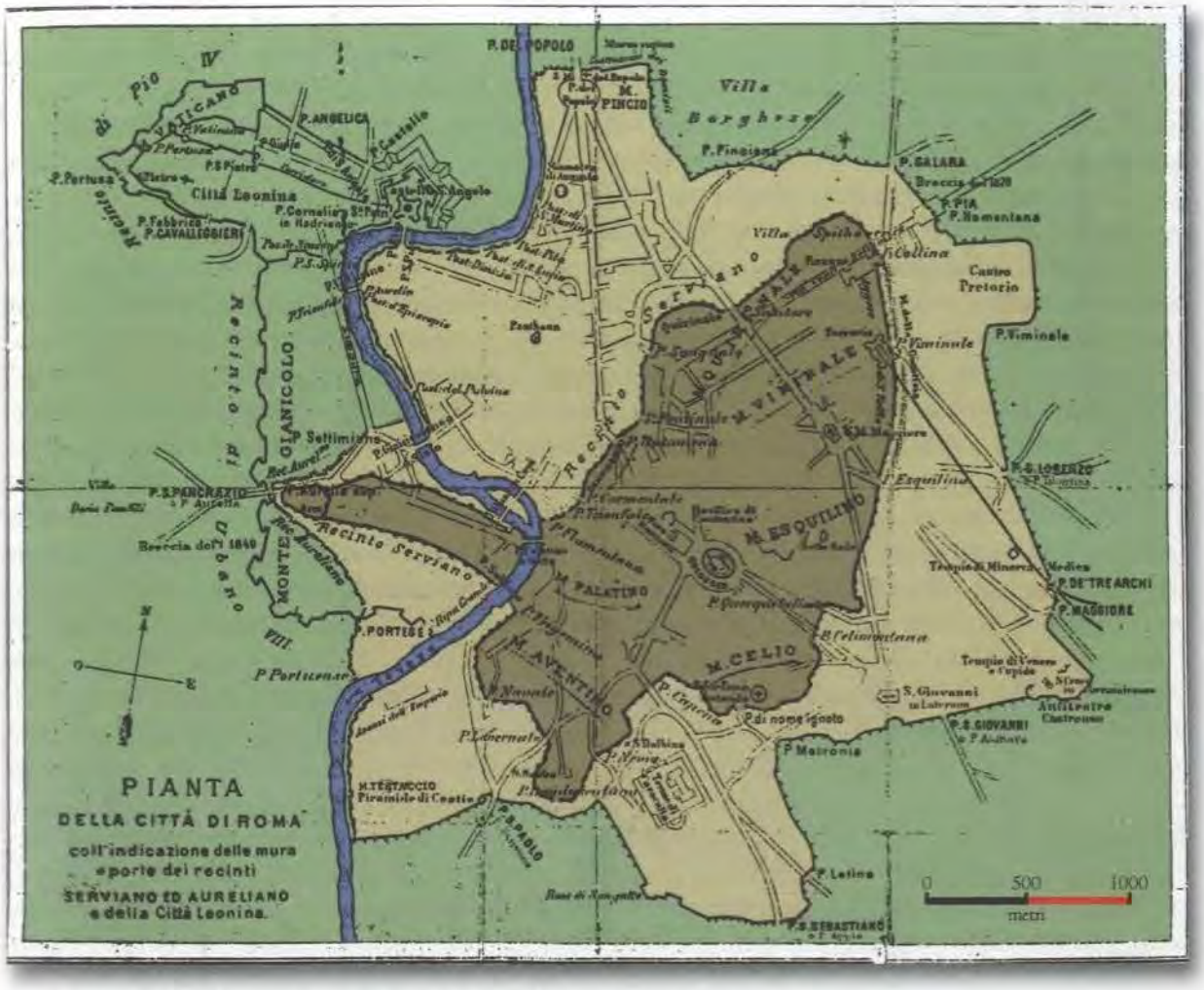
themselves in accordance with the agreed upon requirements. It should be noted in this regard that there was a rather singular fiscal regulation that referred to a basic entity, which was the estate. Those who were in total possession were included in the first class, obligated to service with the entire armour provided by the State; the remainder were placed in the other four classes according to a system that envisaged inclusion into the second class for possessors of 3/4 of the estate, in the third for owners of only half of the estate, in the fourth for owners of a fourth and fifth for those possessing an eighth. Considering that according to:"*the method used at the time to divide the soil, almost half of these were entire estates; each group of those who possessed three fourths or half or a fourth of the estate corresponded to barely an eighth of the population. The eights of the estate were held by another abundant eighth. It was thus determined that for infantry conscription for each eighty owners of an entire estate, twenty from each of the other three groups would be enrolled and twenty eight from the last.*"[21]

Apart from the definition, which in itself cannot be quantified directly, what would an entire estate correspond to, how many of our modern hectares? Though we have no data on this either, we can deduce that it was approximately 20 jugers. Now the juger, according to its etymology, from the word *iugum*-yoke, was the amount of land that could be ploughed in one day with a pair of yoked oxen. At this point we can easily equate it to a quarter of a hectare, or 2,500 sqm. The Roman estate must therefore have been approximately 5 hectares, a not particularly large amount especially considering the demographic density of the era. In any event, although such a system is not explicitly handed down it does indicate that there must have been a perfectly maintained and updated land register where they not only recorded the owners but also the various transfers of ownership. This implied a systematic and periodic revision of the registry itself, in order to have updated and reliable information for recruitment.

ROMAN SURFACE UNITS	
Heredium	equal to two jugers, corresponding to approximately ½ hectare
Centuria	equal to 100 *heredium*, 200 jugers, approximately 50 hectares
Saltus	equal to 4 centuries, 800 jugers, approximately 200 hectares

For purposes of conscription, the Servian reforms divided the city and the surrounding territory into quarters, obviously four, called *tribus*, from which we derive the rank of *tribune*. These tribes, not to be confused with genetic ones, are to be considered more as districts, the first including the ancient city, the second the new city, the third the old and subsequently walled old town, the fourth the sector that was joined to the city by the walls of Servius Tullius.[22] Almost certainly the territory adjacent to every district was considered its primary appurtenance, in order to make the number of men for each district basically the same. Whatever may have been the criterion, even in the definitions of districts we note in the Servian reforms an attempt to rationalise the entire military sector. In fact, there is no aspect of the Servian reforms that does not have a clear relevance to or explicit relation with military service. Even the regulation that excluded anyone over the age of sixty from the centuries, finds no justification other than age limit.[23]

There emerges a sort of paradox for the Roman army of the Monarchy, a paradox that will continue into the Republican era. For its members to be considered worthy and to become a part of the army they had to prove that they had a census, that is that they possessed an estate. The more resources they had, the more they had



Planimetria delle mura serviane di Roma, IV sec. a.C., all'interno di quelle aureliane.
Planimetry of the Servian Walls, IV c. B.C., located inside the Aurelian Walls.

to spend to comply with the decrees regarding armaments. Considering also that the entity of the census, although considered in money, actually referred to the possession of land, which income cannot be considered a constant, the sacrifice demanded was not insignificant and leads to many questions. Why did one who had more land have to sustain a greater cost to wage war on the front lines, where mortality was presumably greater? What was the criterion for that reverse choice, at least according to our current method of judgment? In an attempt to explain:"*the insufficiency of a purely utilitarian interpretation of this law of the proportionality of military and political functions in an ancient city [and Rome in particular, a.n.] we will extend the analysis to an adjacent sector: that of the qualitative, rather than quantitative principles of citizenship... In effect, the good soldier coincided with the land owner, not only because this was the type of wealth that, in the event of an adverse fate, would be difficult to conceal from the enemy, while it would be fairly simple for mobile assets; but also because the labour of the soil...was considered an education in virtue, the place where one learns the qualities of prudence, strength and justice that are the foundation of military valour...*"[24]

In other words, those who possessed land, in addition to having something to lose, were also accustomed to great labour in the expectation of a just compensation! Furthermore, the ideal soldier was like the

father of the family, not only because the desire to safeguard the life and liberty of his children provided him with stronger motivations to fight, but also because by acting thusly he fully realized his function as citizen, fulfilling his religious and civil responsibilities, considered essential for the survival of the community.[25] This second motivation also confirms the preference for those who had something to lose, including non-material assets, as they were considered more responsible. Apart from ethical and material considerations, the fundamental principle that was the foundation of the Timocratic State was the correspondence between greater wealth and greater political and military duties. From a particular perspective this is even logical, since possession of an asset also implies its defence. Associating membership in the army to possession of land was a guarantee of the motivation of its members, almost like a mortgage, for as they defended their own assets they also defended those of the entire community and its independence. It followed that this task was delegated to the wealthier members of the army, who also had the best armament as they had to defend themselves first of all. Nevertheless, neither ethical nor pragmatic motivations seem to be sufficient to fully justify this option, at least from a certain time onward, that is from the beginning of an increasing well being and a decreasing existential austerity, as in such case society would not be homogeneously motivated to sacrifice. It cannot be denied that war had already begun to appear as an activity that was, if not profitable, at least remunerative, certainly dangerous, but one not lacking in material recompense. Although not explicitly admitted, nor sanctioned by any law, there was another reason for the pre-eminent military role of the wealthy and, by contrast, the lesser role of the proletariat.

In addition to an increasing quantity of spoils, the majority of which was absorbed by the State, victorious campaigns also greatly expanded territory at the expense of the enemy. Of course all such possessions should have been used for the public good but increasingly often these lands were divided among the wealthy and, in particular, among the senators. A situation that rapidly led to a strong socio-economic diversification of the population, as a direct consequence of war. If on the one hand an increasingly greater number of conscripts could not manage to sustain the expenses of a campaign, especially because of the decreased income from interrupted agricultural, pastoral or craft activities, on the other the elite became richer from the profits of war. Thus with the expansion of conquests, while the great majority of conscripted citizens became impoverished, the senatorial aristocracy appropriated the profits produced by Roman imperialism. It acquired de facto and legally, the best and greater part of the spoils of war, the *ager romanus*, that greatly increased with the confiscation of the territories of the defeated.[26] As specifically recalled by Appian [27], very quickly of those vast illegal possessions:"*the rich considered themselves the owners... acquiring it by means of persuasion, or by invading the small properties of the poor citizens that bordered them. Vast dominions replaced small legacies. Land and herds were given to farmers and shepherds of a servile status, to prevent the inconvenience that military conscription might frighten free men... the result of all these circumstances was that the great became very wealthy and the population... of free men decreased because of difficulties, taxes and military service...*"[28]

One must therefore conclude that the exclusion of the proletarian classes from the higher ranks of the army was not a simple consequence of their inability to equip themselves in an adequate manner, a deficiency that from a certain time on could have been easily resolved at the expense of the State, but was instead a specific will to exclude. Thus the basic principle underlying the classification of the military hierarchy according to the individual's ability to secure arms and his interest in defence yielded to a completely different concept. In short, power belonged to those who had an adequate estate or income, without any other justification! According to Cicero this singular concept went back to King Servius, that is to the very origins of Rome, when membership in the military was reserved solely to those who had property, thus excluding the proletariat.[29]

Size and Subdivisions of the Establishment

According to the above, the army resulting from the Servian reforms may be summarized as follows: the Roman legion continued to be, as it had been up to that time, the basic infantry military unit; a phalanx of three thousand men, composed and armed entirely in accordance with the ancient Doric manner. Tactically it consisted of six lines, the front consisting five hundred fully equipped men, assisted by an additional one thousand two hundred unarmed men, called *velites* or *velati*.[30] The basic division between *seniores*, from 47 to 60 years of age, and *juniores*, from 17 to 46, indicates a duality of military tasks divided between static and field assignments, or garrison duty and defence for the former and territorial maneuvers and attack for the latter. It is in respect of the latter that the subdivision by census is logical and highly evident, even from afar, in their different individual armament.

The soldiers of the first class and stationed in the first lines had a round shield, greaves, cuirass and helmet, as well as sword and spear, weapons purchased at their expense and of their property, implicitly indicating a certain formal and functional variety. This was the heavy infantry, corresponding basically to what the Greeks called *hoplites*, deployed in the front lines of the phalanx formation. The second class had basically similar equipment with the exception of the shield, which was oblong, a choice that also implicitly indicates that the cuirass was not necessary. In this case also, in order to understand the logic of the protective devices we must refer to the phalanx formation and its combat tactics, which will be described in more detail later. The third class maintained the same characteristics as the second, but without the greaves, proof of its position further in the rear and thus more sheltered. The fourth followed with only spears and javelins and no passive protection, and finally the fifth, armed only with slings and sometimes only with stones. The hurling weapons were arranged according to the range of the weapon itself, with the spears in front as they could strike targets to about thirty metres and the slingsmen behind, as they could strike a target up to about a hundred meters. The formation thus appears to be carefully calibrated to inflict increasing losses with the closing of distances, from one hundred meters to the point of impact.

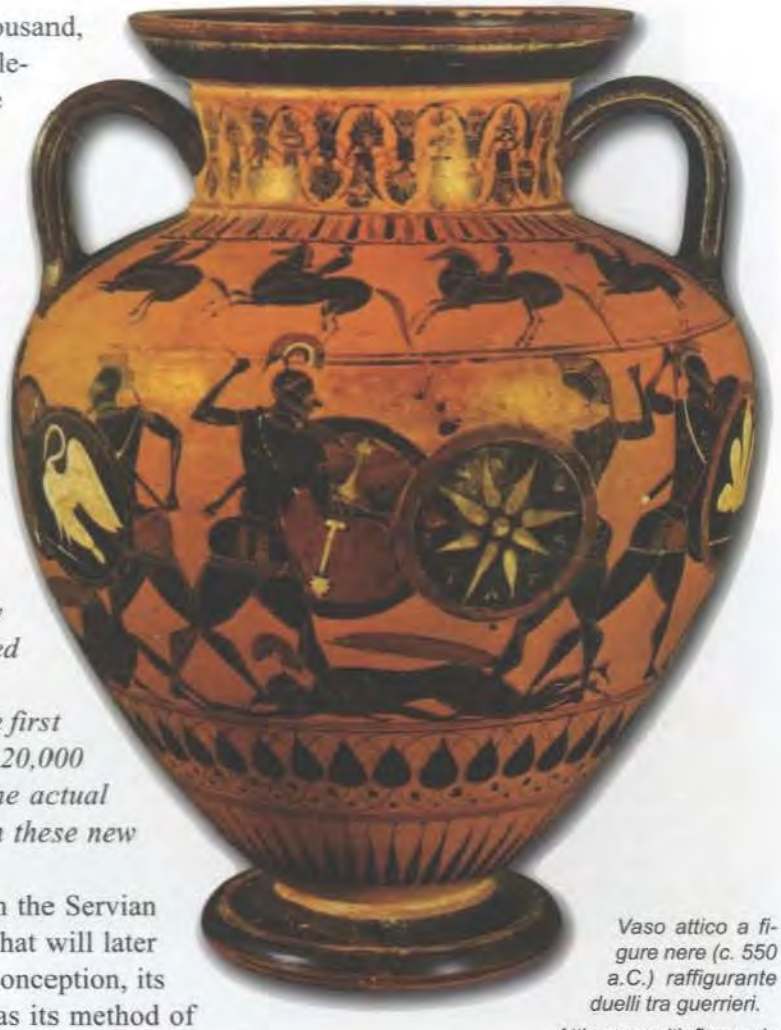
Given that after the Servian reforms the presumed number of men that could be conscrip-

Oplita con armamento completo.
Hoplite wearing a complete armour.

ted into the new army was about twenty thousand, and considering the number of members in a legion at the time, one must assume there were not less than four legions. To be exact, two pairs of two. When required: "*two legions were usually activated; the other two remaining as a presidium: thus the normal infantry consisted of four legions equal to 16,800 men, with 80 centuries in the first class, 20 in each of the following three, 28 in the last, not including the two centuries of temporaries and the century of labourers and musicians. To this was added the cavalry, numbering 1800 horses, a third of which was reserved for the political members of the community; however, when the campaign began, usually only three centuries of horses were assigned to each legion.*

The normal size of the Roman army for the first and second call-up numbered approximately 20,000 men, which doubtlessly corresponded to the actual number of Romans able to bear arms when these new militia orders were introduced."[31]

If the great tactical unit that resulted from the Servian reforms is considered as the prototype of what will later become the actual legion, of basic Roman conception, its defensive and offensive armament as well as its method of formation and, especially, of fighting appear to be unquestionably of Greek origin.



Vaso attico a figure nere (c. 550 a.C.) raffigurante duelli tra guerrieri.

Attic vase with figures in black (c. 550 B.C.) representing warriors duelling.

Sotto: Rievocazione gruppo di opliti in schieramento falangistico.

Below: Group of hoplites in phalanx formation.

Defensive and Offensive, Individual and Collective Armaments

Like the Macedonian phalanx, which reached its peak with Philip II and was perfected by his son Alexander, the Roman legion also descends from the classical Greek phalanx. However, its special characteristics and its skilful adaptation to the nature and morphology of the south cen-

tral territory transformed it into a tactical formation so unique as to fully justify its abandonment for altogether different theatres of combat. In the period studied, however, its derivation from the Doric model is still very evident, especially when it deployed in combat formation, with the famous six lines of 500 men. The legion of this era was based on the hoplite arrangement, which means that even while using a census based recruitment, the creator of this reform continued to use the same combat methods as the Etruscans of the second half of the VII century, in close formation, deploying only one line of fully armed hoplites before the entire army, a limitation undoubtedly resulting from the impossibility of outfitting everyone with the same panoply.[32] As for the meaning of panoply, the term comes from the Greek *pan*, all, and *òplia*, *armour*, therefore armour extended to the majority of the body.

But what was the social basis for the adoption of the phalanx formation and, above all, what did the political armament consist of to make it so burdensome that, perhaps initially, only the wealthier classes could afford it? According to tradition:"*the appearance of the hoplite armament and of a battle formation founded on the feeling of solidarity and the spirit of discipline ... [are associated with] the expansion of the civic body and the birth of the city. But historians disagree on which element played the decisive role in this dual evolution. For some it was the technical progress of the armament that, by imposing a new battle formation, compelled the aristocracy to associate all citizens to the defence of the community and thus share in the exercise of political power. For others it was the changing relations among the social forces that stripped the aristocracy of its political*

Dall'alto:
Fanteria pesante babilonese armata di lance e di larghi scudi rettangolari.
Bassorilievo del IV sec. a.C. raffigurante la falange, l'unità principale dell'esercito macedone fortemente rinnovata da Filippo II.
Rievocazione gruppo di opliti.

From above:
Babylonian heavy infantry armed with lances and large, rectangular shields.
IV c. B.C. bas-relief of a phalanx, principal unit of the Macedonian phalanx greatly reinforced by Phillip II.
Representation of a hoplite unit.

privileges, led to the establishment of a battle formation favourable to mass action and the invention of adequate arms. But... a third solution has recently been proposed, one that believes the hoplite phalanx to have been initially a mere technical instrument at the service of the aristocracy, later exploited for the political ascent of new social classes."[33]

Not wishing to delve further into the genesis of the phalanx and its related armament it is nevertheless interesting to examine it in detail. The greatest and most obvious feature of the hoplite, destined to remain unchanged for many centuries and on all battlefields of the Mediterranean, was the protection of the combatant. The most important part of this protection was without doubt the circular shield, in Greek *hoplon*, thus the definition of warrior as hoplite. Its etymology reveals an even closer association with the phalanx: it derives from the verb *òpomai*, meaning *seguo* (I follow), *vengo dietro* (I come behind), *mi pongo dietro* (I stand behind), obviously behind the shield and the row in front. The hoplon was perfectly circular, moderately convex and, slightly larger than one diameter in circumference. There were smaller variants reserved for the cavalry, such as the *peltè* [34], and perhaps the Roman *clipeus* could be considered an intermediate type. In any event, it was a solid and light protection, consisting of a wood or cane frame upon which rested the external surface, also made of wood or of a polished bronze lamina, often decorated with identification symbols or apotropaic emblems. Internally it had a central handle, called porpax, that enclosed the entire forearm, and a leather strap, called *antilabe*, anchored it to the left hand to ensure stability.

The gilding or patina on the external surface of the shield was not strictly for aesthetic purposes as it also had a defensive function. It was often used as a mirror to dazzle the enemy in close combat and especially prior to the impact of the phalanx. A practice that could explain the differences in the shields of the second line soldiers. Since their diameter did not exceed one meter, the shield of the

Elmo etrusco del V sec. a.C . e ricostruzione di elmi similari con cimiero.
Elmo apulo-italico in bronzo con paragnatidi e supporti per penne laterali e cresta centrale.
Etruscan helmet from the V c. B.C. and reconstruction of similar helmets with crest.
Apulian-Italic helmet in bronze, with cheek-guards and supports for the side feathers and central crest.

hoplite could not entirely cover him, as the lower part of the legs and the upper part of the chest were not shielded. Additional metal protections were therefore needed, such as the greaves and chest armour, to which was added a massive helmet of varied shape and form. These included:"*helmets, with or without plumes, with nose guard, visor, a neck guard and cheek-guard (paragnathides); metal armour – some rigid, made in two parts, ventral and dorsal, that enclosed the chest like a bell or that took the form of the muscles; others were soft because they could be broken up into various elements of bronze sewn on a sheath of leather or linen, or accurately fastened to a coat of mail; the leg-guards, called cnemidi, covered the front and side of the leg between the knee and the ankle; exceptionally there were also (especially in the second half of the VI century, period of the apogee of political equipment), thigh and arm guards, belts and leather aprons (to protect from arrows).*"[35]

All this defensive armament transformed the Greek hoplite into a forerunner of the medieval warrior, who like his epigone, must have been very slow and clumsy in his movements, such that unlike his descendant, he did not fight or move on horseback. He was thus capable of making only very slow progress, a cadenced advance in a straight line and in a large and open plain, a morphology difficult to find in the countryside of central Italy. It would have been absurd to attempt to climb even a very modest height wearing such armour or to maintain an aligned formation on an even slightly uneven ground. The issue was of the greatest importance as: "*the result of the battle depended specifically on maintaining this order. Which explains the need for radical changes in the Roman phalanx, something that became indispensable as soon as the range of action of the legions went past the plains of Latium to the north and especially to the south.*

As for the offensive armament of the hoplite this was reduced to a wooden spear, between 2 - 2.5 m long, with a bronze or iron tip, and a short sword whose blade could be straight or curved, for use in close combat. Evidence of the entire panoply and of the offensive arms just described is found so frequently on the images of proto-Corinthian vases from the second quarter of the VII century, as to date all such arms to this historical period as if they were a single invention. Many tombs, however, with more or less intact funerary dowries indicate that the panoply is not the result of a single development, of a complete and original creation, but rather a point of arrival for successive aggregations, encompassing the contributions of many Greek cities over a chronological period of centuries. This would explain the appearance of cuirasses and helmets from different periods, of varying forms and concepts, beginning with the first discoveries of the VIII century B.C. up to those of the VI century B.C."[36]

That the panoply was burdensome to wear and too closely associated with the phalanx formation is obvious in the tendency toward a progressive li-

Corazza a dischi in bronzo, IV sec. a.C.
Tunisi, Museo del Bardo: corazza romana dorata, I sec. d.C.
Ricostruzione di corazza a dischi.

Cuirass made of bronze discs, IV c. B.C.
Tunis, Bardo Museum: gilded Roman cuirass, I c. A.D.
Reconstruction of cuirass made of discs.

ghtening, beginning in the V century B.C. This may have been a consequence of the different combat tactics that no longer found both contenders agreeable to a single frontal encounter in an open field. Or it may have been because they wished to preserve the most effective items of the panoply also for infantrymen trained to combat in open order, perhaps even on difficult terrain. What is certain is that from the beginning of the V century there is reliable evidence that the soft cuirass replaced the rigid one. That the leather or felt cap, *pilos*, took the place of the bronze helmet. That with the beginning of the Peloponnesian wars, the hoplites no longer carried the second spear that in the past was frequently held in reserve in the left hand. At the beginning of the IV century they went even further when the Athenian strategist Iphycrates equipped his hoplites with a light shield, and the tyrant Jason of Feres provided them only with a half cuirass.[37]

The Advent of Artillery

The elimination of the cuirass and other pieces of armour should not necessarily be considered a consequence of their excessive weight, an encumbrance that was perfectly obvious as soon as these items were put on, but of the diminishing protection they provided and an increasing awareness of their ineffectiveness, something that has always been the case upon the appearance of new arms or the radical reinforcement of existing ones. The powerful armoured ships, the cuirass par excellence, disappeared from the seas as soon as the advent of missiles made them pathetically vulnerable! The panoply of steel worn by the medieval warrior was first reduced and then disappeared completely, rendered useless by the simple impact of a few grams of lead! It is also probable that a decisive role in this development was played by the emergence of a weapon that could easily defeat the purpose of normal armour and other bronze protective devices, making them useless. It is no coincidence that elastic artillery made its appearance in the beginning of the IV century B.C. and was quickly perfected, an unequivocal sign of its effectiveness, soon passing from a strictly obsidional use to field defence, weapons that were produced in great quantities by decree of the tyrant of Syracuse, Dionysus the Elder, as early as the end of the V century B.C.. In this regard there is the emblematic comment by Archidamus, King of Sparta between 361 and 338, who cried, as he observed a catapult imported from Sicily for the first time:"*Oh Heracles, to what purpose henceforth the military virtue of man!*"[38] An exclamation that could only refer to the futility of the panoply and certainly not to the combat itself as they were engaged in close combat at the time and such weapons would have been useless.

It should also be noted that the use of one or two spears about two meters long, to be hurled with or without propulsion, was not a characteristic of the phalanx. For the phalanx, with the reconstitution introduced by Philip II the Macedonian in the middle of the IV century B.C., was equipped with one spear, called a *sarissa*, of form and dimension so different and peculiar as to not even be considered a spear and, even less as a launching weapon. The sarissa, which the phalangist held with both hands in a horizontal position, was a rod of variable length according to the row it was intended to strike. For the fifth or sixth line, according to the era, at any rate the last of the phalanx participating in the sixteen-line confrontation, it could reach approximately 7 m. Considering that the line of battle, defined as largo, left a space of approximately 1 m among the men, while the one defined as serrato half that amount, the 7 m long sarissa still projected outward by 2 m from the first line, the same as that of the traditional spears of an equal size.

When the five shafts were side by side, extending from the heads of the phalangists, above their shields, they formed a sort of armoured porcupine that advanced impenetrably. A compact rectangle:"*of infantrymen with heavy armour and equipped with shield and staff... the phalanx was more than a simple*

crowd of armed men united to maintain cohesion and to prevent the opening of dangerous faults in the front line ... a battle between two armies of phalangists was a test of strength and force, with the two compact formations fighting until one of the two broke ranks and fled. In this type of war there was no room for strategy; once the battle had begun, the individual was submerged in a mass of bodies covered in sweat and since not even the notion of reservists existed, there was no possibility of outside help"[39]

From the Phalanx to the Roman legion

It is remarkable to see that the Hellenic phalanx, derived from the Macedonian through various adjustments that further emphasized offensive capability to the detriment of mobility, reached its peak with the *great phalanx* or *tetrafalangarchia*. This was composed of four corps of lesser phalanxes, called taxis or falangarchia of 4,096 men each, for a total number of 16,384 hoplites and was very similar to the divisions of the Servian army of 16,800 men, divided into four legions. This similarity cannot be considered a mere coincidence but rather a significant continuation of the older Roman army formation, adapted through the centuries to the evolving operational tactics. Another continuation is in the procedure used to replace victims. Since the real problem of the phalanx was the difficulty of replacing the soldiers of the front line, the most exposed to losses, with others wearing the same armament, suitable reinforcements were required. Thus one of the first measures implemented by the Romans was to quickly replace the fallen and to close gaps in the formation. As for providing reinforcements with similar armament this issue was resolved by simply removing the panoply of the dead: a sort of enforced loan!

In addition to the regular combatants, there were also militarised non- combatants who marched with the army without taking part in the battle except in exceptional cases. These were persons who did not reside in Rome, called *adcensi*, and who were assigned to positions close to those obligated to military service. These ranks provided the legions with various labourers, musicians and especially a certain number of reserves, called *velati*, who followed the ranks but without any armament. When there were deficiencies in the lines during battles, or even gaps caused by illness, they removed the weapons of the injured and the dead and took their places.

Another curious reminder of the phalanx still evident in the legion comes from its oblique advancement, with the right extremity of the formation advancing past the left, almost like the beginning of a rotation. Which, from the point of view of the ambitious led to the tactical prominence of the right over the left, almost as if it wished to enter more quickly into contact with the enemy! In some cases to obviate this deficiency the left sector was increased, but the right always remained the strongest, a superiority that was further enhanced in the legion, in which the first cohort was always of double strength in respect of the subsequent nine.

From a tactical perspective the oblique movement also led to a series of manoeuvres, at first simply to compensate and later by veiled intent. The outcome of the confrontation often depended on the ability to maintain a regular formation and line of battle, thus the strict need to initiate fighting on large, level

terrains, to march in step and to synchronise the attack, in order to achieve a simultaneous thrust as a sum of all the individual ones for the greatest effect. Since it was practically impossible in the course of manoeuvres to prevent the phalangists from moving, even imperceptibly, toward the right to seek protection from the shield of a neighbour, that movement had in some way to be organic and harmonic. And since the thrusts of the phalangists continued for centuries they ended up exploiting that involuntary movement toward the right wing, attacking the flank of the enemy in an attempt to envelop him by a partial rotation, thus modifying the criteria of frontal impact. In spite of these variations of the IV century B.C., the tactical repertory of the phalanx of hoplites always remained very limited.[40]

The Cavalry

When we examine the role and the significance of the cavalry in ancient armies in general and the Roman army in particular, we cannot help but remark the very slight potential of this service because of two crucial technical deficiencies: nailed horseshoes and the staff. We know that from a certain time on the Romans used something very similar to a shoe for their horses but this was nevertheless not very effective and had very little resistance. Historically the Assyrians were among the first to have mounted combatants, but they never went beyond the concept of mounted archers. The number of such horsemen increased to 1,500 vis a vis 20,000 infantrymen, or 300 for every 4,000 men, around the VII- VI century. Strangely this will be the same proportion found in the Roman army, 300 horsemen compared to 4,200 infantrymen, a coincidence that once again cannot be fortuitous.

With the Servian reforms, the cavalry, which at the time was 10% of the infantry, was tripled by adding to each squadron of citizens a double number of non-citizens. Thus to

Arciere nomade asiatico, VI sec. a.C.
A fianco: Ipposandalo romano.
Asian nomad archer, VI c. B.C.
Side: Roman horseshoe with bindings.

the already existing formations bearing the ancient names of Tities, Ramnians and Luceres, *primi* and *secondi*, numbering 600 men, another 1,200 were added for a total of 1,800 compared to the 16,800 infantrymen, which in the meantime had reached legionnaire formation. This proportion remained basically unchanged as did the names of the six original formations and it was the exclusive province of the patricians. The most likely explanation for this different organisation is the fact that cavalry squadrons could not be formed and disbanded at the beginning and end of every campaign. Their horses had to be maintained and protected even in peacetime and during the winter, for that one use. A situation that probably came about when the State began to supply the horse, a very expensive animal, at the time valued almost the same as the estate or income of the fifth class, and just as difficult to maintain. Livy wrote that it cost the treasury 10,000 asses to buy a horse for each of the cavalrymen, while their maintenance was paid by unmarried and wealthy women, each in the amount of 2,000 asses per year.[41]

The wartime use of the cavalry, however, was progressively limited, as it was used mostly for reconnaissance tasks, pursuit of the defeated in flight, skirmishes and at times even for simple transportation. Thus the reason they began to consider additional uses for periodic exercises and demonstrations. In any event the history of the Roman cavalry appears to be afflicted by a series of unreliable banalities. We may even conclude that initially the cavalry may have simply been a mounted infantry, the more so as the morphology of Latium, like a good part of Greece, is not particularly suited to raising and training horses.[42]

The cavalry had within its ranks the richest and most illustrious landowners, to the extent that many scholars believe possession of land to have been the only requirement for becoming a member. This, however, did not release landowners who were not suitable for military service, such as unmarried women and minor orphans, from the obligation of providing for the forage of the horses for the individual horsemen, each of whom had to own two.

The Camp and its Remote Origins

Although we do not know with any degree of certainty either its genesis or chronological placement, it is plausible that in the second half of the IV century B.C. something very similar to the canonical camp had already been in use for some time for it is unlikely that so many thousands of men and animals could move in an orderly manner and sojourn, perhaps even in enemy territory, without an at least minimal protection and adequate logistical support. Even more difficult to believe that such a complex structure was adopted on the spur of the moment by merely copying a casually encountered model! Without considering that nothing of the sort is found in other societies, even those of a superior militaristic and imperialistic nature, in any historical and geographic context. Mommsen is of this opinion and writes that around the V-IV century, the system of encampments, areas where a corps of militia would

Foto aeree e ricostruzione di villaggio dauno trincerato.

Aerial photographs and reconstruction of an entrenched Daunian village.

stop, began to become organised and structured, even if required only for a single night. This encampment was always a closed environment, surrounded by a rather frail perimeter fortification that assimilated it, de facto, to an actual fortress.[43]

If a camp was required for several days, or even for a single night, for so many soldiers, the typical camp cannot be supposed to be very different from a quadrilateral area: an enclosure formed by the earth resulting from digging a ring shaped trench, with a continuous palisade above. An archaic defensive solution but one that had been widely used in Italy for over a thousand years in the Daunian villages and, for several centuries, even by Rome itself. Not incidentally legend attributed the murder of Remus to his sacrilegious crossing of a sulcus, symbol of the moat or trench. Why not believe therefore that the legionnaire encampment was a re- proposal, perfected and adapted to the purpose, of that remote concept of fortification? Proof of such may be found in Frontino who maintains that initially the Roman army assembled in cabanae, or huts, inside a perimeter or a trench, like the enclosed prehistoric villages, assuming its principal characteristics!

Masada, foto aerea di uno dei campi legionari romani.
Masada, aerial photograph of one of the Roman legionnaire camps.

Nella pagina a fianco: Schema generico di campo legionario romano.
Side page: Generic scheme of a Roman legionnaire camp.

Notes

1 - From T. MOMMSEN, *Storia di Roma antica*, book one *Dalle origini alla cacciata dei re di Roma*, reprint Bologna 1979, vol.I, p. 57.

2 - Cf. T. MOMMSEN, *Storia di Roma...*, cit., p. 60.

3 - Cf. T. MOMMSEN, *Storia di Roma...*, cit., p. 62.

4 - Cf. T. MOMMSEN, *Storia di Roma...*, cit., p. 63.

5 - From L. QUILICI, *Roma primitiva e le origini della civiltà laziale*, Rome 1979, p. 148.

6 - Cf. F. RUSSO; *Ingegno e paura. Trenta secoli di fortificazioni in Italia*, Rome 2005, vol. I, pp. 97- 146.

7- Cf. G. TAGLIAMONTE, *I Sanniti, Caudini, Irpini, entri, Carracini, Frentani*, Milan 1997, pp. 7-13.

8- Cf. A. BERNARDI, M. A. LEVI, *Le origini di Roma*, in *La Storia*, Milan 2006, vol.III, pp. 107-128.

9 - Cfr B. CUNILIFFE, *Roma e il suo impero*, Bologna 1981, p. 47.

10 - Cfr B. CUNILIFFE, *Roma...*, cit., p. 48.

11 - Cf. L. QUILICI, *Roma primitiva...*, cit., pp.150-153.

12 - Cf. B. CUNILIFFE, *Roma...*, cit., p. 50.

13 - Cf. T. DEL PELO PARDI, *I cunicoli del Lazio*, Roma 1969, pp. 40 e foll.

14 - Cf. L. QUILICI, Roma primitiva..., cit., pp. 68-76

15 - A. BERNARDI, M. A. LEVI, *Le origini di Roma*, in *La Storia*, Milan 2006, vol.III, pp. 650.

16 - From J. WACHER, *Il mondo di Roma...*, cit., p. 85.

17 - From T. MOMMSEN, *Storia di Roma antica...*, cit., book I, p.111

18 - Cf. Y. GARLAN, *Guerra e società nel mondo antico*, Bologna 1985, p. 92.

19 - Cf. J. WACHER, *Il mondo di Roma...*, cit., p. 85.

20 - From T. LIVIO, I, 43, 1-11. Quotation is from Y.GARLAN, *Guerra e società...*,cit., p. 91.

21 - From T. MOMMSEN, *Storia di Roma antica...*, cit., book I, p.112.

22 - Cf. F. RUSSO, *Ingegno...*, cit., vol. I, pp. 255-258. Also, cf. F. COARELLI, *Le mura regie e repubblicane*, in *Mura e porte di Roma*, Rome 1995, pp.21 and foll.; M. QUERCIOLI, *Le mura e le porte di Roma*, Roma 1982, pp.62-82.

23 - From T. MOMMSEN, *Storia di Roma antica*..., cit., book I, p.116.

24 - From Y. GARLAN, *Guerra e società*..., cit., p. 92.

25 - Cf. Y. GARLAN, *Guerra e società*..., cit., p. 93.

26 - Cf. Y. GARLAN, *Guerra e società*..., cit., p. 107.

27 - Cf. APPIANO, *Guerre civili*, I, 7

28 - From Y. GARLAN, *Guerra e società*..., cit., p. 107.

29 - From E. GABBA, *Le origini dell'esercito professionale in Roma: i proletari e la riforma di Mario*, in «*Athenaeum*», XXVII, 1949, p. 174.

30 - Cf. T. MOMMSEN, *Storia di Roma antica*..., cit., book I, p.114.

31 - From T. MOMMSEN, *Storia di Roma antica*..., cit., book I, p.115.

32 - Cf. Y. GARLAN, *Guerra e società*..., cit., p. 141.

33 - From Y. GARLAN, *Guerra e società*..., cit., p. 137.

34 - Re the term peltè cf. F. RUSSO, *L'artiglieria delle legioni romane*, Rome 2004, p. 53.

35 - From Y. GARLAN, *Guerra e società*..., cit., p. 133.

36 - Cf. J. HARMAND, *L'arte della guerra nel mondo antico*, Rome 1978, pp. 85-96.

37 - Cf. Y. GARLAN, *Guerra e società*..., cit., p. 134.

38 - From PLUTARCO, Mor., 191E. Quotation from E.W. MARSDEN, *Greek and roman artillery. Historical development*, Oxford 1969, p. 65.

39 - From R. A. PRESTON, S. F. WISE, *Storia sociale della guerra*, Verona 1973, p. 28.

40 - Cf. Y. GARLAN, *Guerra e società*..., cit., p. 136.

41 - Cf. J. WACHER, *Il mondo di Roma*..., cit., p. 86.

42 - Cf. J. HARMAND, *L'arte della guerra nel mondo*..., cit., pp. 98-99.

43 - Cf. T. MOMMSEN, *Storia di Roma antica*..., cit., book II, p.545.

Part Two

The Legions of the Republic

L'area sotto il controllo di Roma nel 270 a.C.
The area controlled by Rome in 270 B.C.

The twilight of the phalanx

Latium has a simple etymology, *latus*, which alludes to its most evident morphological characteristic: the vastness of the level area of its territory, practically horizontal and flat. If this claim is negated by some of the more uneven terrain of the region, this is explained by the fact that this additional land was aggregated subsequently. Historically, this occurred in 1870, with the birth of the Italian nation, thus:"*neither in ancient times, nor in the Middle Ages and in the modern era up to that time had the term ever been used to include the region north of the Tiber, that made up Tuscia, or Sabina, whose very names come from the ancient people who had inhabited them, Etruscans and Sabines, and who had a very distinct geographic, historical and cultural context. Up to the end of the nineteenth century Latium meant the Roman Campagna and the regions to its south up to the border of the Kingdom of Naples, which at the time excluded, contrary to today, Gaeta and Cassino...*

The name itself, Latium, if compared with the adjective latus (gr. platùs), wide, large, indicates the vastness of the plain, the extent that could be encompassed visually from the epicentre of the Colli or from the top of the hills that delimited it... The term Latini would in such case mean «people of the plain ."[1]

An ideal environment to manoeuvre a phalanx or the fast war chariots that, in spite of their high original cost, have emerged from excavation sites in moderate number and in various states of preservation. Not incidentally: "*in the final royal era and in the first century of the republic (V c.) the Roman state affirmed its supremacy in Latium, defending it even against repeated attacks from aggressive tribes of the Apennine hinterland in which territories it could not so easily counterattack given its rigid structure... not suitable even for siege operations: the cities that were equipped were almost impossible to take and if they succeeded in defeating such a prestigious and well equipped city as Veii in 396, after a decade of confrontations, this was due principally to a betrayal.*"[2]

Epigrafe commemorativa della conquista di Veio.
Commemorative epigraph of the conquest of Veii.

There was also another aspect of the phalanx that required appropriate solutions, even prior to its abandonment. Combat in close order, with all soldiers in close contact with the two others on both sides and very close to those of the line ahead and behind, did not require any personal initiative, no heroic flamboyance and even less did it require any autonomous decision. The pha-

langist was the classical component element of a large machine, lacking any will other than to hold his position to the very end. A limitation that the Spartans equated to death, thus they returned from combat either with the large shield or on the large shield! A tactical de-personalisation that guaranteed some success even to the most obtuse and unruly hoplite. This type of warrior needed only little training and an irrelevant assessment capability, apart of course from a massive constitution, as conformity supplanted all other requirements!

With the adoption of the maniple arrangement, which it must be pointed out, was not an option but a consequence of the losses inflicted especially by the ruthless Samnites [3], the situation changed drastically. The legionnaires had to not only operate in small groups, but also according to the choices and the tactical evaluations of the commander of that modest unit, even though within the context of a known strategic design. The result was the need for greater training both of recruits and commanders.[4] Nothing further psychologically from the old order in which every combatant watched over and was watched over by others with equal severity. Any divergence, though possible, would have stigmatised him for insubordination and rebellion, an anarchical conduct that the geometric phalanx did not tolerate. In many respects, the logic of combat adopted by the Samnites was similar to guerrilla warfare where each small unit, though obeying a chief, remained fully autonomous! It does not appear to be accidental that such forms of combat are found, throughout history, in mountainous regions and that they always caused great difficulties to seasoned armies, often causing them to desist. After the initial tragic failures, the Romans radically modified their tactical postu- re, initiating a modernisation of their military institution and, in the final analysis, setting the concrete bases for its expansion.

Consequences on Armament

This new type of army also led to a noticeable change in the defensive and offensive armament. The passive protection of the individual milite, now almost completely lacking the protective screen of his fellow soldiers, had to be increased, giving him adequate arms for close and open combat. In the mountainous theatres,

Sarcofago policromo delle Amazzoni, da Tarquinia. Particolare del combattimento.
Multi-coloured sarcophagus of the Amazons, from Tarquinia. Detail of combat.

Nella pagina a fianco: *Statua in bronzo di guerriero detta il "Marte di Todi", perché trovata sul monte Santo presso la città umbra nel 1835. Si ravvisano nelle fattezze un oplita etrusco.*

Side page: *Bronze statue of warrior called the "Mars of Todi", found on the Monte Santo near the Umbrian city in 1835. Typical illustration of an Etruscan hoplite.*

the launching of javelins, arrows and stones, became a priority as their greater range favoured those in the highest position. It thus became indispensable to adjust by using arms similar to those of the enemy, a practice implemented by the Romans in all circumstances. The citizen militia thus slowly began its transformation into a permanent or standing army. Numerous changes were required to reach full maturity, changes that had to be more incisive and less timid, but the abandonment of the old phalangist system was without doubt its premise. And if the transformation did not take place with greater alacrity, this was solely because of the highly conservative Roman spirit. Nevertheless, an undeniable proof of the process is evident in the advancement of the rorarius, who until that time had been able to combat much as a slingsman, without any hope of career advancement. In the subsequent period, however, he begins to gradually ascend to the first and then the second line, finally reaching, when fully experienced, the line of the triarii, considered the backbone of the army, not because of their number but for their valour.[5]

If the inadequacy of the phalanx became evident and urgent in the course of Rome's military campaigns outside of Latium, the first signs of the need for a profound transformation of the army were already present during the long siege of Veii, between 386 and 396 B.C. Its abnormally long duration for the era, to the point of being compared with the siege of Troy, and the impossibility of suspending it during the bad season, required that the legionnaires be paid an indemnity in money. From this time on, military service began to emerge as a possible activity, eliminating the concept of civic duty that was implicit in the phalanx. Armaments also changed: helmets became thicker and without excessive ornaments, to allow downward thrusts to slide off; oval shields were provided with an iron border, also to resist downward strokes and blows of the axe. And it was almost certainly in this context that they adopted the pilum, a blunt javelin that became a regulation weapon of the legionnaire, who generally had two. Concerning its derivation, along with the long shield, scutum, of Samnite origin, the pilum may have been the result of a brief description found in the Ineditum Vaticanum, attributed to Cecilio di Calatte.[6]

Cavaliere romano di epoca imperiale.
Roman horseman of the Imperial Era.

Declassification of the Cavalry

As mentioned previously, the role of the cavalry in the Roman army, as in all armies of antiquity, was marginal and much different from that of the Middle Ages. There were many reasons for this and many consequences, including the high cost of the horses and their maintenance. It followed that if the high cost of the army resulted in reduced establishments, the reduced establishments in turn could not achieve significant

Spada in ferro con fodero in bronzo. Dal sito gallico di Port-Nidau. Inizi del I sec. a.C. e coppia di daghe in ferro angolate, appartenuti ad un guerriero celta dell'area illirica, probabilmente degli Stordisci.

Iron sword with bronze sheath. From the Gallic site of Port-Nidau. Beginning of I c. B.C. and pair of short swords in angled iron, belonging to a Celtic warrior of the Illyrian area, probably from the Scordisci tribe.

results! Which is certainly true from the V century onward for Greece and from the IV for Italy. Until that time, in the period between the abandonment of the war chariot and the affirmation of the phalanx, the cavalry was of indubitable tactical importance and this is perhaps the basis for its affirmation as a social class, a political supremacy that will later pass to members of the infantry taken from among the major landowners. Of course not all scholars agree with this assessment and some theorise there were two separate and successive periods, the first characterised by a military, social and political primacy of the cavalry and a second by the formation of political types of armies. During this latter phase, the equestrian aristocracy having lost most of its military relevance managed only to preserve its social and political importance, removing it from any direct association with the military context save for mere genealogical reference.[7]

How little importance is given to the cavalry is demonstrated by a sarcastic speech that Xenophont gave to his men in 322 B.C. in the course of the celebrated retreat:"*if any of you are intimidated by the fact that we have no horsemen, consider that ten thousand horsemen are no more than ten thousand men. No one ever died in battle because of the bite or kick of a horse: what takes place in battle depends exclusively on the men. Compared to the horsemen, we have a much more secure base: they are suspended on their horses fearing not only us, but also the risk of falling; we on the other hand, have our feet firmly planted on the ground, can strike them with much greater force every time they approach and can reach whomever we wish with much greater ease. The only advantage of the horsemen is that they can flee with lesser risks.*"[8]

The Hypothetical Reform of Furius Camillus

Thicker helmets and shields with rims of iron are an obvious indication of the adaptation to close combat against an enemy equipped with powerful cutting weapons. Characteristics not compatible with combat between phalanxes, which even after impact did not offer the combatants enough space to make any violent downward thrusts. The need for such modifications must therefore relate to other battles, perhaps those consequent to the arrival of the Celts. One of the most tragically memorable of these incidents for the Romans occurred in 390 B.C. when the Celts appeared along the coasts of the river Allia, armed with daggers to attack the Roman phalanx with unimaginable violence, throwing it into immediate chaos.

With the array broken the Romans fled in a disorderly manner, seeking refuge on the opposite shore of the river, pursued by the barbarians. Those who managed to escape dispersed between the right bank of the Tiber and Veii, between them and Rome were the Celts. At that point there was no hope for the city to escape conquest.[9]

According to the most reliable theories, it was after this defeat that Furius Camillus took the initiative, or was authorised to do so, to modify the tactical posture of the legion. Since an identical task had again to be taken just a few decades later, this change was probably either partial or inadequate. In short, a half measure and one that was merely temporary, which a subsequent confrontation with the Samnite mountaineers compelled to a clear and radical reformulation. Mommsen also surmises, and this theory is widely shared, that it was the impact with the armed Celts that suggested the initial change, and that the division of the army into separate blocks of maniples was an attempt to attenuate the initial and more furious attack of the enemy, a goal that appears to have been reached. Thus the supposition agrees with the affirmation, repeated in many narrations, that the greatest commander of the Romans at the time of the Gauls, Marcus Furius Camillus, was also the reformer of their combat tactics.[10]

Origin of the Maniple Legion

It has been observed by many scholars that:"*when the Romans penetrated into Campania, the legion as a rigid formation could still manoeuvre well, but when it came into contact with the Samnites and their army... [and] had to penetrate into the Apennine hinterland, it encountered many difficulties: adjustments to the new type of war became necessary and it was then that, to provide it with mobility and manoeuvrability, the maniple came to replace the century as the larger tactical unit (maniple coming from the word for a handful of hay, manipulus, that was its emblem in antiquity), the result of the union of two centuries; the 60 centuries of the legion thus became 30 maniples.*"[11]

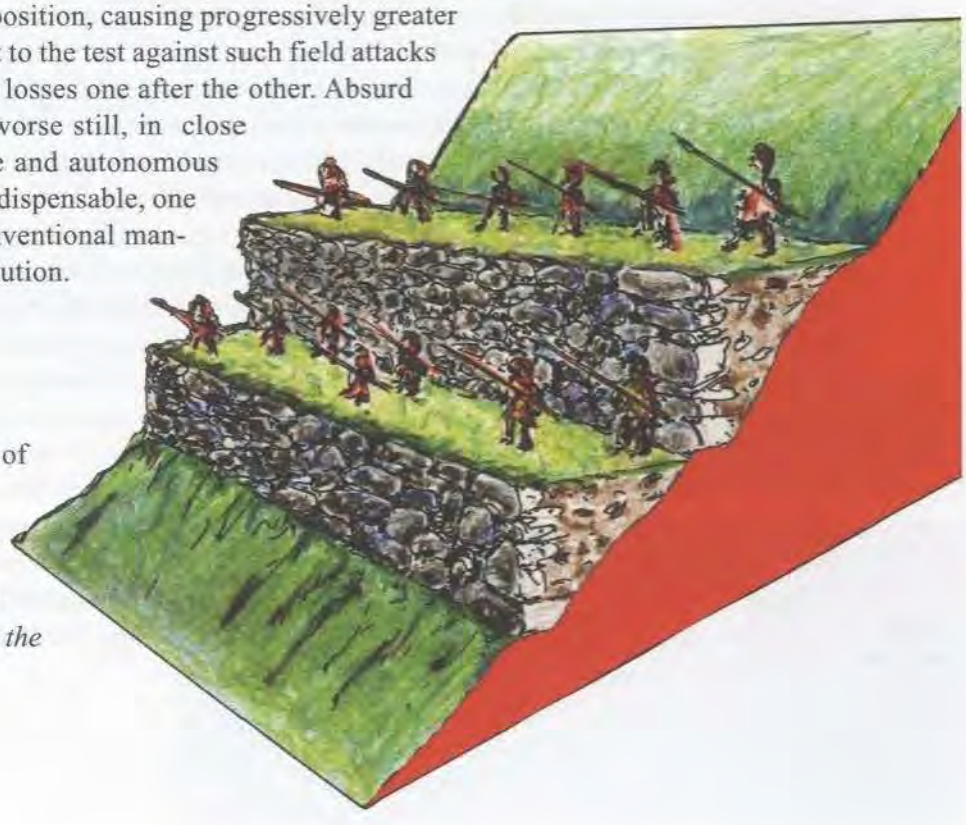
The historical period that saw the debut of the maniple legion is almost always contemporaneous with the debut of the Macedonian phalanx, literally called the sarissofori. A synchronism from which we deduce, rather than a common evolutional need, a common perception of the archaic nature of a formation no longer suited to the needs of more difficult operational theatres, such as those of northern Greece and central Italy. The element common to both the Macedonians and the Romans was the stimulus toward expansion. Their respective modifications, however, differed as the former developed an order by ranks that were even closer and deeper, while the latter fragmented it into smaller articulated and autonomous units. The formation that originally consisted of 8,400 men was split into two legions of 4,200 men each, destined to a different form of combat. The staff which could be defined as the main weapon of the phalanx, held with both hands, was relegated to the third line, while the first two were provided with a weapon to be thrown and that was very typical of the Italics: the pilum. Almost certainly used for the active defence of the numerous polygonal structure fortifications in the central Apennines [12], because of its terrible effectiveness it was used to arm the legions. It appears to have been hurled during the final phase of the drive prior to the attack, when no more than thirty or so meters divided the two formations.

Thus began the race, within the dynamics of tactical mutation, toward telekinetic weapons, arms not suited to hand to hand combat but capable of striking at progressively greater distances, a tendency that has never been inverted An alien witnessing human evolution from another planet would soon discover the essential role of combat between two contenders. And he would employ even less time to discover that its immutable nature consists in a mutual hurling with increasingly greater energy and from increasingly greater distances. The small stone launched from the ancient rotating sling, or the thin piece of

pointed wood released from a prehistoric bow, a whirling boomerang or yet a ball of metal shot by the violent oxidation of gunpowder, the concept remains the same. From time to time the nature of the thrust may change as may the range covered, the mass of the projectile or even its overall lethality but the criteria of the sequence remain the same. Even a ballistic vector with multiple nuclear warheads is still an amount of energy, enormous in this case, destined to strike the enemy of the moment, wherever he may be on the face of the earth. If in the reforms enacted by Furius Camillus, and the weapons he used and modified, indicate the nature of the adversary and his method of combat, the enemy is also defined by this second series of adaptations. An enemy who fought from a distance, striking with arrows and javelins and who avoided any direct confrontation simply by dispersing.

The Fortifications of the Samnites

The numerous Samnite polygonal fortifications still in existence appear to be extremely rudimentary. Dry stone walls extending almost horizontally along the slopes of hillsides, adhering to its convolutions, forming projections and indentations, ideal for striking attackers. When built circling the top they followed the tactical edge without leaving the least space on their exterior for any assault. No tower, no battlement, no communication trench for patrols, no moat: a choice dictated not by ignorance but by a different method of fighting. From the top of those structures it was effective and simple to unleash a terrible attack toward the bottom, one that could not be countered with equal effectiveness.[13] Frequently such walls, incorrectly defined as cerchie or cinte, were multiple, staggered by altitude. The entire structure assuming the aspect of a gigantic terrace complex, with Samnite warriors armed with a javelin stationed on each level. This arrangement allowed for launching by rows, similar to a charge of line guns, where the first was on its knees and the second standing. Similarly, after the first line had completed its launch from the first level, the second duplicated it from above. An attacker's attempt to approach for close engagement came at a high cost, often sufficient to stop hostilities. If the attack was not yet completed, the Samnites withdrew to the upper position, causing progressively greater losses. The Romans were put to the test against such field attacks for decades, suffering heavy losses one after the other. Absurd to attack them in force or, worse still, in close ranks: a more evasive, agile and autonomous combat formation became indispensable, one that could fight in a non conventional manner. The maniple was the solution.



Maniple Legion

Many precise definitions of the maniple legions have been handed down to us by various Roman historians. Livy for example wrote: "*the phalanx formation, similar to the*

Macedonian, later became a line of battle composed of maniples, while the rear guard had different types of troops. The first line consisted of the hastati, with fifteen maniples, drawn up at a short distance from each other. Each maniple had twenty soldiers equipped with light arms, such as a long spear (hasta) and javelins; the remainder were soldiers carrying oblong shields. The front line consisted of men in the first bloom of youth just old enough for service. Behind them were stationed an equal number of maniples, called principes, made up of older soldiers, all carrying an oblong shield and superior weapons.

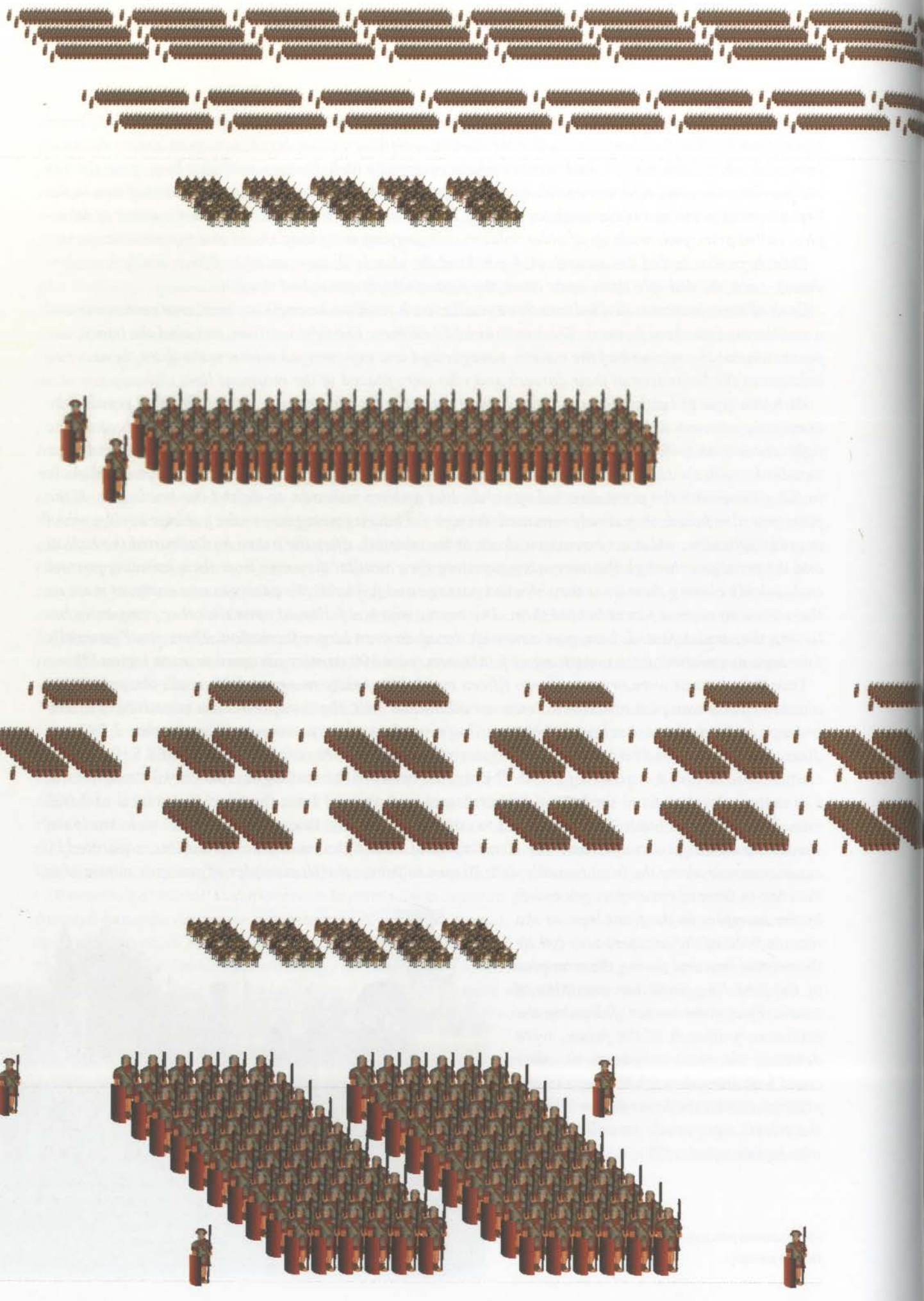
This corps was called the antepilani, for behind the standards were another fifteen battle lines (ordines), each divided into three open lines, the first of which was called the pilus.

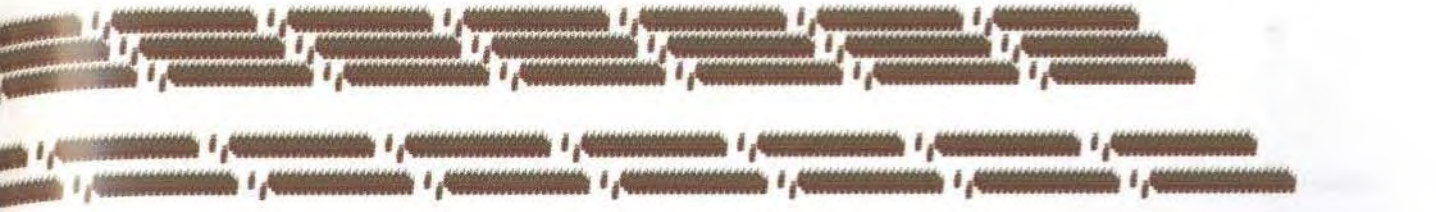
Each of these lines was divided into three vexilla, each vexillum having sixty men, two centurions and a vexillarius (standard-bearer). The line thus had 186 men. The first vexillum included the triarii, expert veterans; the second had the rorarii, younger and less experienced soldiers; the third the accensi, soldiers at the beginning of their careers and who were placed in the rearmost line.

With this type of battle formation, the hastati were the first to engage. If they failed to repulse the enemy, they retreated through the spaces between the maniples of the principes, who then took up the fight, the hastati following behind. In the meantime, the triarii were resting on one knee behind their standards, with the left leg forward, the shield over their shoulder and their spears planted obliquely in the ground with the point directed upwards, like a sharp palisade to defend the battle line. If the principes also failed, they slowly retreated through the triarii (giving rise to the popular saying, when in great difficulty,: «Matters have come down to the triarii»). After the triarii had admitted the hastati and the principes through the intervals separating their vexilla, they rose from their kneeling posture and, quickly closing their lines they blocked passage and fell upon the enemy in one compact mass as there were no reserve forces behind them. The enemy who had followed upon the other companies believing they had defeated them, now saw with dread an even larger formation. There were generally four legions enrolled, each consisting of 5,000 men, with 300 cavalry assigned to each legion."[14]

Thus:"*the hastati were organised into fifteen maniples of sixty-two men, 930 in all, the principi in another fifteen maniples of sixty-two men, an additional 930; the third formation consisted of fifteen ordines, or battle lines, each with three vexilla (maniples) of sixty-two men, thus another 2,790 soldiers. For a total of 4,650 men for each legion; if we add the 300 cavalry, the total of 4,950, is sufficiently close to Livy's estimate of 5,000.*"[15] Polybius believed the rear legion had only 30 maniples of 120 men each taken from the hastati and principes and only 60 from the triari, for a total of 3,000 men. Regarding the battle formation used to combat the enemy, those:"*30 maniples were stationed checkerboard or quincunx fashion: the 10 maniples of hastati stationed on the front line, separated by equal intervals along the front (usually with 20 men in front); the 10 maniples of pincipes stationed in the rear, in front of the empty spaces left by the maniples in the front line; in the rear, in front of the empty spaces left by the second line and facing the maniples of the first line, were ten maniples of triarii. Thus if the hastati, following the preliminary launch of the pilum, were defeated in close engagement, they could withdraw through the gaps of the principes and if the latter also withdrew, the triarii were ready to collect those who had escaped ...*"[16]

Rievocazione panoplia oplitica.
Hoplite panoply.





Schieramento legione manipolare secondo Livio.
In dettaglio un manipolo di 60 uomini, pari ad una centuria ed una turma di 30 cavalieri.

Maniple legion formation according to Livy.
Maniple of 60 men, equal to a century and a squadron of 30 horsemen.

Schieramento legione manipolare secondo Polibio.
In dettaglio un manipolo raddoppiato di 120 uomini, pari a due centurie di 60 ed una turma di 30 cavalieri.

Formation of maniple legion according to Polybius.
A double maniple of 120 men, equal to two centuries of 60 and a squadron of 30 horsemen.

There is a certain similarity between the tactics of the Samnites, stationed along several lines staggered according to height and the tactics of the Romans, stationed on several lines staggered on land, both of which were abandoned when it became indispensable to assist the subsequent lines. The cruder tactic was probably more effective than the more evolved one, as the latter was less suited to that type of combat. Obviously the Samnite weapon, one that was deadly to the Romans, the famous *pilum*, was quickly adopted by the legions to better exploit the same combat tactic. A move that marked a tangible step forward in the abandonment of the phalanx. For many scholars, this was not a clear cut, brusque passage but a long and gradual process whose every phase was pondered and tested. Specifically, it is believed that the first two lines of the formation described by Livy, those of the hastati and the principes were the only ones to use the maniple formation, while the third line continued to station itself as phalanx, armed with a staff.

The Legion of Polybius

During the first Republican era, that from a military aspect may be considered as a continuation of the Monarchical era, the overall number of the army did not change. But its significance within the state did, gradually evolving from a citizen militia of seasonal use to a permanent and professional armed force. The various phases of this change were numerous and their frequency increased during the Hellenic era, with the payment of wages and the qualification of legionnaires. The first things to change were the procedures for conscription and selection to form two armies, each consisting of two legions, under a consul whose general staff was composed of twelve tribunes, six for each army. In total, there were two consuls and twenty-four tribunes of which, according to Polybius, fourteen had a maximum seniority of five years of service and ten, double that amount. As for the annual campaigns which a citizen had to accomplish up to the age of 46, these were sixteen for the infantry and ten for the cavalry.[17] Those who were less wealthy and had a census of less than 400 drachma, were required to enlist in the navy.[18] When necessary, the service of the infantry was extended to twenty years, or an additional four years, and all were forbidden from holding any political office without first having served ten years in the military.

According to Polybius, conscription took place once a year, on a specific day in which all citizens subject to this obligation assembled in Rome, in the Campidoglio. At that point, the younger tribunes, according to the order by which they were chosen by the consul or by the people, divided into the four groups that made up the basic subdivision of the entire Roman army. According to this system the first four tribunes were assigned to the first legion, the following three to the second, another four to the third and the final three to the fourth. As for the ten senior tribunes, two were assigned to the first legion, three to the second, two to the third and the last three to the fourth. Upon completion of this preliminary phase, the procedure continued in accordance with a specific program, as recounted by the same author: *" The division and appointment of the officers completed so that each legion has the same number, those of each legion assemble in separate groups and draw lots for the tribes, summoning one at a time according to the draw. From each tribe they select four lads of more or less the same age and physique. From these the officers of the first legion have first choice, those of the second, second choice, those of the third, third and those of the fourth last. Another group of four is then brought forward, and this time the officers of the second legion have first choice and so forth, so that the officers of the first legion are now the last to choose. For the third group, the tribunes of the third legion choose first and those of the second last. By thus continuing to give each legion first choice, every legion gets men of the same standard, until the predetermined number is reached (that for each legion is 4,200 men, or 5,000 in times of exceptional danger). At one time the cavalry was chosen after the 4,200 men of the infantry; but the cavalry are now chosen first, according to their wealth and 300 are assigned to each legion.*

21. The enrolment having been completed in this manner, those of the tribunes to whom this duty falls assemble the newly-enrolled soldiers, and picking out of the whole body a single man whom they think most suitable, make him take the oath that he will obey his officers and execute their orders as far as is in his power. Then the others come forward and each in his turn takes the oath pledging that he will do the same as the first soldier.

At the same time the consuls send their orders for mobilisation to the magistrates of the allied cities from which they wish to receive troops, specifying the numbers required, and the day and place at which the men selected must present themselves. The allies cities choose the men and administer the oath in the manner above described and send the soldiers with a commander and a paymaster.

The tribunes in Rome, after administering the oath, fix for each legion a day and a place at which the men are to present themselves without arms and then dismiss them. When they come to the rendezvous, they choose the youngest and poorest to form the velites, or troops with light arms; the following are named hastati. Those in the prime of life are made princeps and the oldest triarii. (These being the names among the Romans of the four classes in each legion distinct in age and equipment). They divided them so that the senior men, known as triarii, are 600, the princeps 1,200, the hastati 1,200, and the rest, consisting of the youngest, are velites (1,200). If the legion consists of more than 4,000 men, they divided them accordingly, except for the triarii, which number is always the same.

22. The youngest soldiers, or velites, are ordered to carry a sword, light javelins and a light shield (parma). The shield is round, strongly made and since it is three feet in diameter, sufficiently large to afford protection. They also wear a plain helmet, sometimes covered with a wolf's skin or something similar, both to protect and to act as a distinguishing mark by which their officers can recognize them and judge if they are fighting courageously or not.

The wooden staff of the javelin (hasta velitaris) measures about two cubits in length and is about a finger's breadth in thickness; the head is a span long, hammered out to such a fine edge that it bends by the first impact and the enemy is no longer able to return it. Otherwise, the weapon could be used by both sides.

23. The next group in seniority, called hastati, are ordered to wear a complete panoply. Their equipment consists of a shield (scutum) with a convex surface measuring two and half feet in width and four feet in length, with the thickness of the rim being a palm's breadth [four fingers]. It is made of two planks glued together. The outer surface is covered in fabric and then with calf-skin. Its upper and lower rims are strengthened by an iron edging which protects from descending blows and from injury when rested on the ground. It also has an iron boss at its centre (umbo) to turn aside the blows of stones, spears and javelins. Besides the shield they also carry a sword, hanging on the right thigh and called a Spanish sword, excellent for thrusting from both sides as it has a short strong double edge.

	Greek Units of Measure	Roman Units of Measure
Finger	mm 19.3	mm 24.6
Palm		mm 7.41
Span	mm 231.2 (12 fingers)	mm 295.7
Cubit	mm 462.4 (2 spans 24 fingers)	
Foot		mm 296.4 (16 fingers)
Simple step		mm 741
Step		mm 1482 (5 f.)
Rod		mm 2964 (10 f.)
Stadium	m 177.6	m 185 (625 f.)
Mile		m 1482 (5000 f.)
League		m 7500 (7500 f.)

The hastati also have two heavy javelins (pila), a bronze helmet and greaves.

There are two types of pila, heavy and light. Some of the pila are round and three cubits in length with a diameter of a palm, others are a palm square. The light pila resemble moderately sized hunting spears and the handle is three cubits long. All have an iron head the same length as the handle. This is so firmly attached to the handle, as half of it is inserted into the handle and nailed to it, that during combat the iron can break but not become detached, although its thickness at the bottom, where it is attached to the wood, is approximately one and a half finger thick. Such great care to they take in attaching it.

The hastati also wear a circle of feathers attached to the top of the helmet as decoration, with three straight black and red feathers about one cubit high, and this, in addition to the rest of the panoply makes a soldier appear to be twice his normal height and give an imposing aspect, striking terror in the enemy.

The soldiers also normally have a bronze breastplate approximately one span square placed over the heart, called heart protector (pectorale) to complete their armour.

Those with more than 10,000 drachmas wear a coat of chain mail (lorica). The princeps and the triari are dressed in a similar manner, except that instead of the pila the triarii have long spears (haste).

24. From each of the classes, except the youngest, the tribunes select ten centurions according to merit, and then an additional ten. All are called centurions, but only those chosen first may sit in the military council. The centurions then appoint an equal number of adjutants or rearguard officers (optiones). Then, in conjunction with the centurions, the tribunes divide each class into ten centuries, except the velites, and assign to each maniple two centurions and two optiones from among the elected officers. The velites are divided equally among all the companies; these companies are called ordines or maniples or vexilla, and their officers are called centurions or ordinum ductores. Finally, these officers appoint from each maniple two standard-bearers (signiferi) selecting them from the best and most courageous. It is natural that they should appoint two commanders for each maniple; for it being uncertain what may be the conduct of an officer or what may happen to him, and affairs of war not admitting of pretexts and excuses, the tribunes do not wish the maniple ever to be without a leader. When both centurions are present, the first elected (centurio prior) commands the right wing of the maniple and the younger (centurio posterior) the left; but if there is only one, he commands the entire maniple. A centurion is required not so much to be venturesome but to be a sensible and reliable leader, and rather than initiate attacks and engage battle someone who stands firm when in difficulty and be ready to die at his post.

25. In like manner the tribunes divide the cavalry into ten squadrons (turmae), and appoint three officers (decuriones) from each, who in turn appoint three rearguard officers (optiones). The head decurion (the one selected first) commands the whole squadron, and the other two also have the rank of decurions. If the first should not be present, the squadron is commanded by the second by order of priority.

Today the cavalry is armed like that of Greece, but at one time they had no cuirass, but only light undergarments; thus they could mount and dismount with great facility and dexterity, but they were also exposed to great danger in close combat, as they were nearly naked. Their spears too were unserviceable for two reasons. First they were so light and flexible that it was almost impossible to take aim and before the head could be fixed into anything, the shaking caused by the motion of the horse was enough to break them. Second, since they had no spikes on the ends, they could only deliver the first strike and if they broke they were of no further use.

The shield was of calf-skin, and resembled the round cakes used for sacrifices. They were of no use for attacking as they were not firm enough and when the leather covering peeled off and rotted from the rain, unserviceable as they were before, they now became completely useless. Since their arms could not

stand up to experience, they soon took to making them in the Greek fashion, which ensures that the first stroke of the spear head is well aimed and effective, since it is constructed steady and strong; and this could also be used by reversing it and striking with the spike at the butt end. The same applies to Greek shields, which being solid and resistant are useful both for distant and close combat.

The Romans, when they noticed this, soon learned to copy such arms as more than any other people they were ready to adopt new fashions and see what was best in others.

26. The tribunes having thus organised the troops and ordered them to arm themselves in this manner, dismiss them to their homes. When the day comes on which they have all sworn to assemble at the place appointed by the consuls (each consul as a rule appointing a separate rendezvous for his own troops, each receiving one half of the allied troops and two Roman legions), all the enrolled assemble; for those who have taken the oath no excuse is admitted except for adverse omens and absolute impossibility.

When all the allies and Romans have assembled, twelve officers appointed by the Consuls, called praefecti sociorum, undertake their administration and training. They first present to the consuls the horsemen and footmen considered most fit for service, selected from among all the allies. They are called extraordinarii (meaning 'selected').

The total number of allied infantry is usually equal to that of the Romans, while the cavalry are three times as many. Approximately one third of the allied cavalry and one fifth of the infantry are assigned to the selected corps. The rest are divided into two parts, the right wing and the left wing.

When all these preliminary arrangements are completed, the tribunes assemble the Romans and the allies and all pitch camp together."[19]

The *Pilum*: Origin and Characteristics

Given the tactical importance of the *pilum*, a brief digression is warranted to describe its characteristics. The *pilum* was similar to a javelin and:"*in its ancient version – it first appeared in the beginning of the IV century B.C.- it had a long round or polygonal sharp iron inserted into a wooden shaft. The long iron of the pilum was extremely useful especially when fighting an enemy using a long sword (such as the Gauls), that could easily cut the wood of the shaft.*

There were two types of classical pila: heavy, made of an iron rod approximately 70 cm long with a tip in the shape of a short leaf or polygonal or round shaft of ash measuring 7.5 cm in diameter and long m 1.40, often with a calzuolo... the iron attachment could be lamellar (to be inserted into the slot in the wood and secured by two nails), or whole or half ferrule. The attachment was a square, truncated cone or spherical ferrule to increase its weight. The light pilum was the same length, whether made of wood or iron, but was much slimmer, measuring approximately 3 cm in diameter and secured by thin plates. Over time this javelin underwent two modifications, both intended to prevent the enemy from hurling the weapon back."[20] The first of these modifications is attributed to Marius (158-86 B.C.) and the second to Caesar (100-44 B.C.).

The *pilum* became part of the regulation weapons of the Roman legions in the IV century B.C. It was approximately two metres long and as far as we know it differed from other weapons of the era because it was thrown – by means of a strap, called amentum, attached immediately behind its centre of gravity and wrapped in two or more loops. If some scholars suppose the generic *pilum* to be of Etruscan origin, others believe it to be Celtic,

while still others believe the amentum version to derive from the Samnites as seems to be confirmed by at least one not unreliable source. Certainly its appearance dates to the period of the Samnite wars and the transformation of the legion from phalanx to maniple formation. In ancient times, arms with similar propelling devices were also found in Greece where:"*the javelins greatly resemble the spears of the hoplites and in the beginning they must have been identical; but soon they began to differ... in the length of the shaft and the size of the tip and the metal bases at both ends. They were hurled by hand, or with the help of a sling attached to the centre of the shaft: in this latter case, they could be launched to a distance of almost 100 metres. Because they were so simple, their technical features did not undergo any significant changes under the Roman Empire.*"[21]

The above description reiterates, at least for some types of *pilum*, the use of a sling to launch the weapons. Technically defined as a flexible propulsor it is a fundamental element in determining the precise tactical merit of these weapons, given the significant increase in range they provided, perhaps as high as 70% according to some scholars. Which would justify the proliferation of launching platforms that soon became permanent field structures throughout the territory.[22] But not all scholars agree on the degree of increase in range, as some scholars believe it to be very slight. To settle the issue a meticulous study was undertaken of other weapons that are still brandished today by backward civilizations. The study revealed without the shadow of a doubt, that the longitudinal rotation of the javelin was adopted specifically because of the greater range it provided, more than 50%, without considering the stabilisation of the trajectory. But in this case also, it became essential to provide appropriate training in launching techniques in order to have skilled marksmen who could achieve maximal results. It is therefore probable that the *pilum*, or its original version, the samnia, was a sort of ethnic weapon of the Pentri Samnites. Similar information is found in the *Ineditum Vaticanum*, which recounts of the Roman cooptation of several arms typical of the Samnites such as the scutum and the *pilum*. The Romans freely admitted to changing much of their armaments according to the best features of the enemy, improving the reliability of such components by rationalizing and standardizing their characteristics.

As for the flexible propulsor defined by the Romans as *amentum*, it appears that this was already present, probably in nebulous form, on the javelins of the Celts, the Etruscans and, as already stated, the Greeks. But it is only in respect of the latter that the theory is supported by unquestionable iconic evidence, the majority found on vases. Whatever may have been the origin of this flexible propulsor, before firing it was wound around the shaft, using the thumb to hold it steady, and when launched it rotated rapidly round. In effect, the pilum or the samnia of the Samnites, did not receive its thrust from the direct hold, that is from the palm of the hand as did traditional spears, but from the instantaneous whipping of the amentum at the conclusion of the launch. This caused a double acceleration –translational and rotational. Translational when the arm of the shooter extended along with

In alto: disegno tratto da una raffigurazione vascolare ritraente un guerriero con giavellotto amentato. A fianco: cuspide di pilum romano.

Above: drawing from a vase painting depicting a warrior with an amentum javelin. To the side: tip of a Roman pilum.

the belt, increasing initial speed and attaining a greater range while the rotational acceleration caused a gyroscopic effect, giving the weapon the same thrust as rifling does on modern bullets. Both these factors greatly increased the range and stability of the launch and achieved an exceptionally deadly potential. The *pilum*, specifically the one provided with an amentum, was not an ephemeral acquisition as demonstrated by a phrase from Julius Caesar's De Bello Gallico [23], wherein the author tells of having ordered one of his men to hurl a *pilum* into the besieged legionnaire camp of the enemy, thus not reachable directly, with a message tied around the *amentum*, reading: *cum epistola ad amentum deligata*.

Trottola a strappo.
Spinning top.

In conclusion it is correct to say that:"*the spears used by the Roman army were thrown further with the help of the amentum, a leather strap twisted around the shaft, appropriately secured, whose free extremity remained in the hand of the shooter... this technique... reached its apex among the miners of West Riding (Yorkshire), where launching competitions, in the XIX century... could reach 340 m.*"[24] A curious and extreme derivation of the deadly weapon and its propulsor still survives in the spinning top used by children which spins rapidly away when the string is pulled!

Auxiliary Troops

In his celebrated treatise on *Military Matters*, Flavius Renatus Vegetius, describes the nature of the auxiliary troops that fought alongside the legions beginning in the Republican Era. He believed that such forces could not be integrated because of their different nature and origin and explains that:"*the auxiliaries are assembled from different areas and have different tasks; they are not united by discipline or mutual knowledge or sentiment. They are divided into different groups and each has its own peculiar discipline and manner of fighting.*

It is natural therefore that victory comes late to them as they are separate before combat.

Furthermore, since it is very useful for all soldiers to be joined by the ideal of a single precept, those who were previously dissimilar cannot carry out orders in the same manner.

This same reality however, if properly trained and disciplined by daily exercises can be of service."[25]

The fact that Vegetius Flavius writes not only of the numerous disadvantages of auxiliary troops but also of their certainly not insignificant potential makes his analysis more immediately effective. The *auxilia* reinforced the legions not simply numerically, which, as justly pointed out by Vegetius, would have been more of a hindrance than a help, but as complementary troops who performed the tasks not performed by others. The Romans, for example, eventually renounced using the bow and sling, transferring this task to the archers and slingsmen of the Balearics; similarly, knowing full well the limited support provided by their own cavalry, they made use of the Berber or Germanic cavalry. Thus, the specific task of the *auxilia* in combat consisted in providing a certain flexibility of action thanks to their greater mobility compared with the heavily armed legionnaire infantry. In field confrontations their support ensured control of the legions' flanks, achieved perhaps by heavy cavalry charges, and pursuit of the defeated at their con-

clusion. Often they even carried out important autonomous military activities without any intervention by the Romans .[26]

From a motivational aspect it was certainly not wages that stimulated voluntary enrolment in the auxiliary units as these were even less than the already meagre ones of the legionnaires, but the possibility of receiving Roman citizenship. For the auxiliaries were not usually Roman citizens and the mirage of becoming one after twenty or thirty years of service was seductive. In reality the link between extended career in the auxiliary forces and the acquired right of citizenship will be established only by the Emperor Claudius, who set the required period of service at 30 years of military service and 25 years on active duty.

It should also be said that the regular army never completely trusted auxiliary troops and frequently preferred to do without their help, even in critical circumstances, preferring to keep them at a distance rather than risk a confrontation. But there was one sector that more than any other was reserved to the auxiliaries: the naval one, whether as contingents or as complete squadrons: emblematic to note that the definition of socii navales (naval associates) ended up designating the crews of Roman ships, whatever may have been their actual origin!

The explanation is found in the Romans' dislike of the sea and the different method of combat at sea. Contrary to the Greeks, who were always ready to drop the sword for the oar when necessary, the Roman was always at heart an infantryman and he never considered ships as a means of warfare but only as transportation or in the best of cases simply a machine, much like the siege engines, leaving their manoeuvring and management to the auxiliary forces or to technicians. A confirmation of this repugnance is the fact that as soon as the Italics acquired the right to Roman citizenship, they immediately ceased belonging to the socii navales!

Which led to a clear distinction between sailors and legionnaires, with the former always considered as a sort of sub-military, necessary but not respected.

Above: re-enactement of auxiliary formations.

Lower left: Rare bas-relief of a polyreme warship.

Lower right: Roman bireme warship with legionnaires on deck.

The Birth of the Wartime Navy

According to tradition, always very dear to the Romans, their ancestors came from the sea: the survivors of Troy reaching Latium by ship, where they pitched camp not far from the sea and founded the first settlement. To frustrate their continuous incursions, the Latins attacked them and set fire to their ships, probably pulled ashore on the beach. From that time the Romans abandoned all relations with the sea except, perhaps, for a minimum level of fishing and merchant traffic along the coasts of their settlements. And yet, as already mentioned, Rome was established along the Tiber, about twenty kilometres from its mouth, and could justly be considered a coastal city. But in reality it delegated to Ostia the role of port for merchant ships that had begun trade relations with the new power. An oblique and indirect naval policy, stigmatized by the famous observation that Rome's naval policy was to avoid having one, a goal that was fully reached when, having conquered the entire perimeter of the Mediterranean, the entire basin became a Roman lake.

Nevertheless Rome had to reckon with the sea from the very beginning and in 509 B.C., the year the kings were expelled following the suicide of Lucretia and consequent proclamation of the Republic, it stipulated its first treaty with Carthage. This was probably ratified by Junius Brutus, the artifice of the expulsion and first consul of the Republic. For history this was the first of a long series than only ended with the destruction of the North African city and the statement:"*under these conditions there will be friendship between the Romans and their allies and the Carthaginians and their allies: neither the Romans nor the allies of the Romans shall sail beyond the promontory of Calos* [27]*, unless forced to do so by storm or by enemies. Whoever is forced to do so shall make no purchases in the market, nor take any more than what is indispensable to resupply the ship or celebrate sacrifices and shall depart within five days. Men coming to trade may conclude no business except in the presence of a herald or town-clerk. The price of whatever is sold in the presence of such shall be secured to the vendor by the state if the sale take place in Libya or Sardinia. If any Roman come to the Carthaginian province in Sicily, he shall enjoy equal rights with the others. The Carthaginians in turn shall do no wrong to the people of Ardea, Antium, Laurentium, Circeii, Terracina or any other city of the Latins not subject to Rome: they shall abstain from touching the cities of the Latins not subject to the Romans and should they take any of them, shall return them intact to the Romans. They shall not build any fortress in the territory: if they enter the land in arms, they may not pass the night therein.*"[28]

From the tenor of the treatise we detect the existence of a Carthaginian war fleet whose attacks along the coasts of Latium had to cease, but not that of a symmetrical Roman fleet. The restrictions imposed on navigation toward the promontory of Calos, facing Carthage, concerns the merchant fleet that must abstain from trading for any reason. It is difficult to ascertain whether there was also a small Roman unit to guard the coastline, as seems to be

Ruins of large Roman villa under Torre Astura along the coast of Anzio. The security aspect of the coastline is evident.

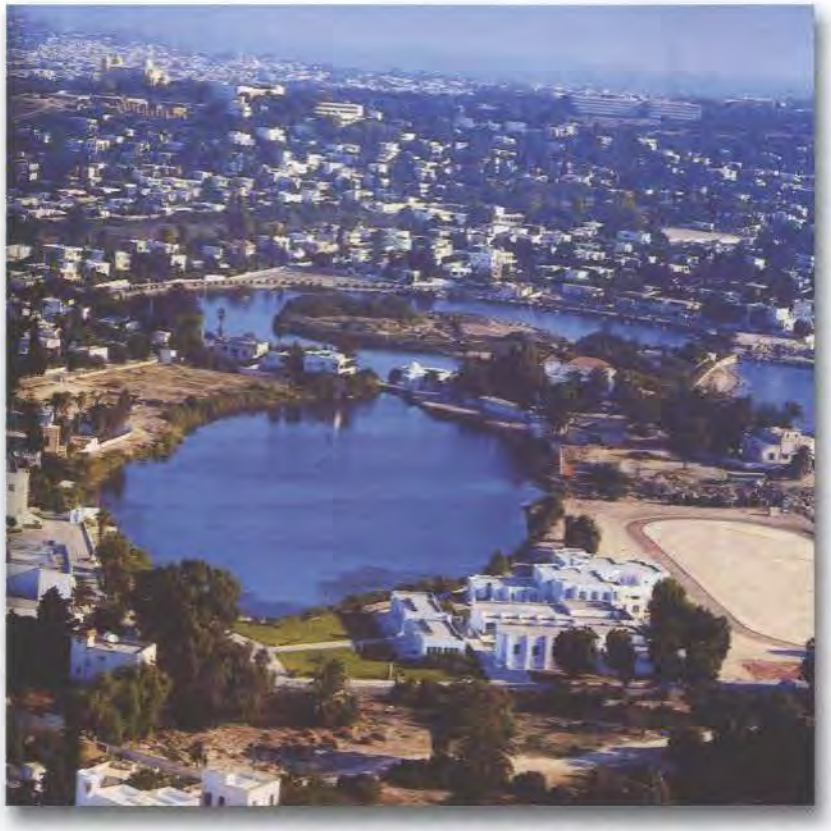
alluded to by Polybius. The situation may have improved somewhat in the following century for in the second treaty with Carthage, drawn up in 348 B.C., there is greater diffidence by the Carthaginians and a clear reference to Roman incursions. Thus the second text reads:"*On these conditions a treaty of friendship is entered into between the Romans, the Roman allies, the Carthaginians, the Tiryns and people of Utica and their allies. Beyond the promontory of Calos, Mastia, Tarsio, the Romans shall not undertake any piracy, nor trade nor shall they found a city.*"[29]

No doubt that at least from the middle of the IV century B.C. Roman ships, military or pirate, were capable of challenging the first thalassocracy of the Mediterranean, up to its port, confirming the increasing power of the Republic even at sea. But some perplexity remains regarding the types of ships, since they were neither simple to construct nor easy to use. We do know that in the year 341 several warships captured by the people of Anzio formed the first nucleus of the actual military fleet and this was perhaps the structural prototype for all that followed. But another thirty years will go by before finding, in 311 B.C., reference to the institution of specific ranks in charge of the fleet. In this case:"*only at the end of the IV century did the Romans, at the time directly threatened in their own territory by pirates, build a flotilla of 20 ships, placed under the command of the duonviri navales classis ornandae reficiendaeque causa; after which, with the immediate danger over, they quickly began to rely completely upon the navy of their allies.*"[30]

But, as was typical of the Classical Era, as rapidly as the fleets were assembled, just as rapidly were they left to deteriorate, as there was no institution in any way resembling a permanent navy. Even the fleets that Rome will put out to sea almost up to the beginning of the vulgar era were ships necessary for ongoing operations, only for the current conflict. A maritime variant of siege engines, also complex and expensive machines that were abandoned or burnt as soon as the siege was over. However, there is no doubt that a great Roman fleet was built under the threat of an imminent confrontation with Carthage in 261 B.C. and that lasted an unusually long time. According to Polybius the Romans:"*seeing that the war would be long...decided to form a fleet with the construction of one hundred quinquiremes and twenty triremes. But this was a very difficult project as the ship builders were completely inexperienced in how to equip a quinquireme, since no one in Italy at the time used such ships.*"[31]

To give an idea of the complexity of the task that, according to Polybius, the Romans were preparing to undertake, the quinquereme was first invented and built in the shipyards of Syracuse by the shipwrights of Dionysius the Elder in 399 B.C. [32] And although there are numerous detailed descriptions and various illustrations of these ships, we do not know even how the rowers were actually placed, nor if the hull was girdled by large cables! It was an extremely complex ship both to build and to navigate, tasks that can in no way be improvised by simple imitation, thus we must conclude that the narration is, in the best of hypotheses, a simplification of the events.

Not incidentally, continues Polybius, very likely compelled by the scarce plausibility of his report:"*from such we learn how spirited and daring were the Romans when determined to do something; they did not have the appropriate means nor any resource nor had they ever given a thought to the sea; yet once the project was conceived they took it in hand so boldly that before gaining any experience in the matter, they at once attacked the Carthaginians,who had held undisputed command of the sea for generations. Evidence of the truth of what I am saying and of their incredible audacity; when they first undertook to send their forces to Sicily, not only had they not any decked ships, but no long warships at all, not even a single boat, and borrowing fifty-oared boats and triremes from the Tarentines and Locrians and from the people of Elear and Naples, they took their troops across.*



On this occasion, the Carthaginians attacked them as they were crossing the Straits and one of their decked ships advanced too far in its eagerness to overtake them and running aground fell to the hands of the Romans. This ship was used as a model, and they built their whole fleet on its pattern. If this had not occurred, it is clear that their inexperience would have forced them to completely abandon the undertaking."[33]

To return to the perplexities mentioned, even if we were to accept, and this would be difficult, their ability to build ships this does not necessarily mean that the Romans knew how to navigate them. At the time ships navigated in view of the coast, but few were able to do so and even less so in war time, especially if the adversary was an expert navigator. It is much more likely that the ships in question were built by Sicilians, well experienced in this field, and that the galley crews were provided by the allies. As for the rowers, we should remember that in general and in the Roman navy in particular, these were never hard labour or chained slaves but free volunteers and often military, in this case from the legions. Obviously they underwent special training, as recounted by Polybius:"*while the shipwrights were preparing to build the ships, others assembled the crews and exercised them in rowing in this manner. They had the members of the crews sit on wooden stages erected on land in the same order as the seats on the ships. The chief crew member was placed in the centre, and they taught them to bend backward bringing their hands with them, then bending forward, extending their arms, to begin and to end movements according to the order of the chief.*

After the sailors had been trained and the ships launched as they were completed, they were tested at sea and sailed along the length of Italy in accordance with the order of the consul."[34]

In alto: foto aerea del porto di Cartagine.
In basso: veduta aerea del centro storico di Siracusa con evidenziati i ruderi del palazzo di Dionisio il Vecchio.

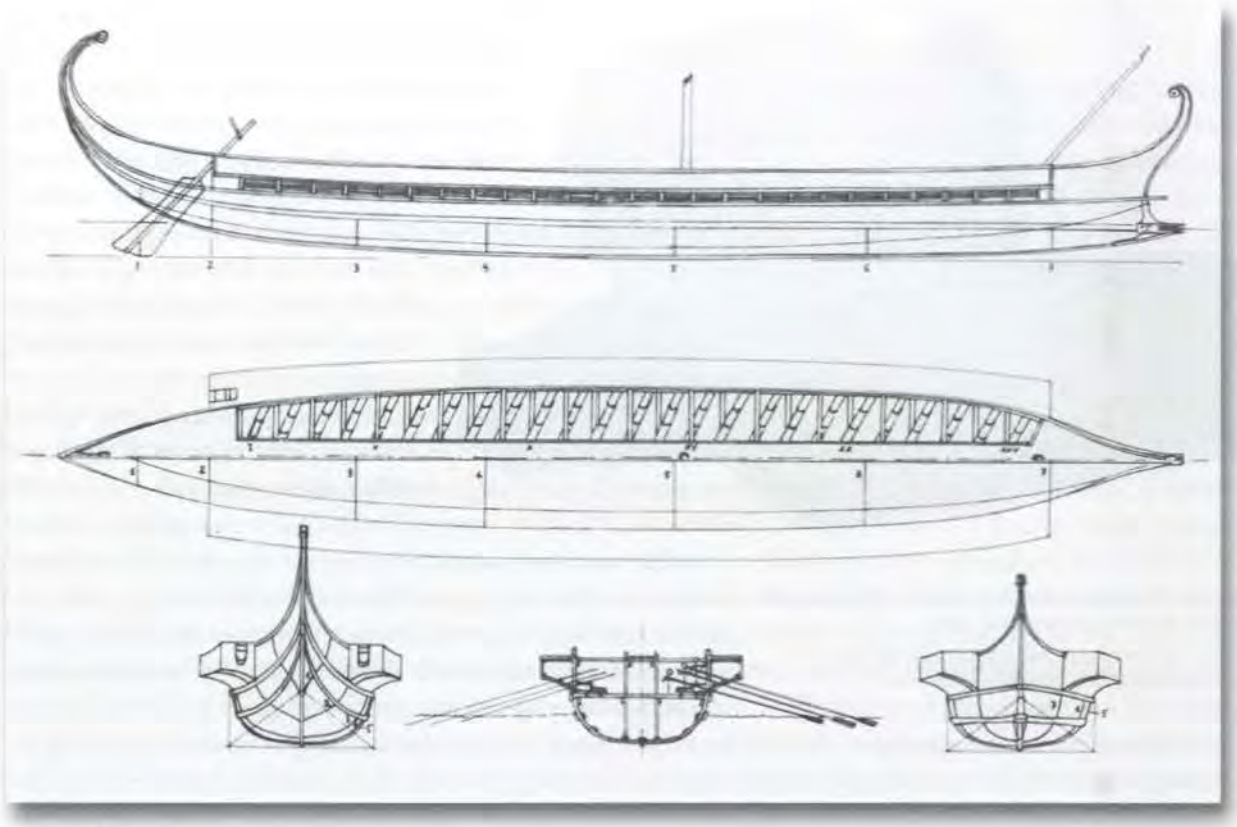
Above: Aerial photographs of the port of Carthage.
Below: Aerial view of the old centre of Syracuse highlighting the ruins of the palace of Dionysius the Elder.

Roman War Ships

Although there were doubtless merchant ships since the beginning of the Republican Era, if for no other reason than for fishing and trade, the experience of such crews was completely useless on warships. For contrary to merchant ships that navigated by sails, in combat or wartime navigation the ships were propelled only by oars, using the square sails with which they were provided only for transfer cruises. Such light and slim ships, with so many rowers, managed to reach surprising speeds, although they were able to maintain them only for very brief periods. Thorough and reliable studies estimate around 11.5 knots, equal to approximately 21 km/h.[35] A speed that could be slightly increased by coating the structure with grease to reduce dynamic resistance. Since speed varied according to the number of rowers, it seems obvious that military ships were classified according to their number and perhaps also their distribution for each oar, rather than the order of oars.

When urgency required the ships to travel at maximum speeds for extended periods, the oars were joined by the sails, averaging a speed of approximately 8-9 knots, reaching up to 11 in ideal conditions. A motor, even a human one, freed them from subordination to the wind, making them, at least from this aspect, very similar to modern ships. As the direct relationship between the number of oars and speed, under equal conditions, was obvious, warships used as many as hundreds. For this reason, the basic dimensions of these warships depended on their system of propulsion: if the length of the hull varied according to the number of rowing benches, its width depended on how many men occupied the same bench. The same holds true when the benches were located on rows staggered vertically. Each bench took up at least one and a half metre broadside, thus a hull 45 m long could hold about thirty at the most, including the inevitable spaces in between. The trireme, the warship par excellence, with three rowers for three separate oars placed symmetrically to the keel, required a hull almost 6 m wide. Since a central lane was also needed to afford access, and to avoid further increasing the main section, the two upper rowing orders were located almost completely off to the side, or outboard, on a special cantilevered structure called gunwale. In conclusion, in order to manoeuvre the oars, its primary motor, one trireme required 31 rowers on the upper benches and 27 for each of the lower benches, on both sides: a total of 170 men!

This was the primary problem to be resolved in fitting out large military fleets: the one described by Polybius, consisting of 100 quinqueremes and 20 triremes, required approximately 33,000 men for the oars alone, plus others to ma-



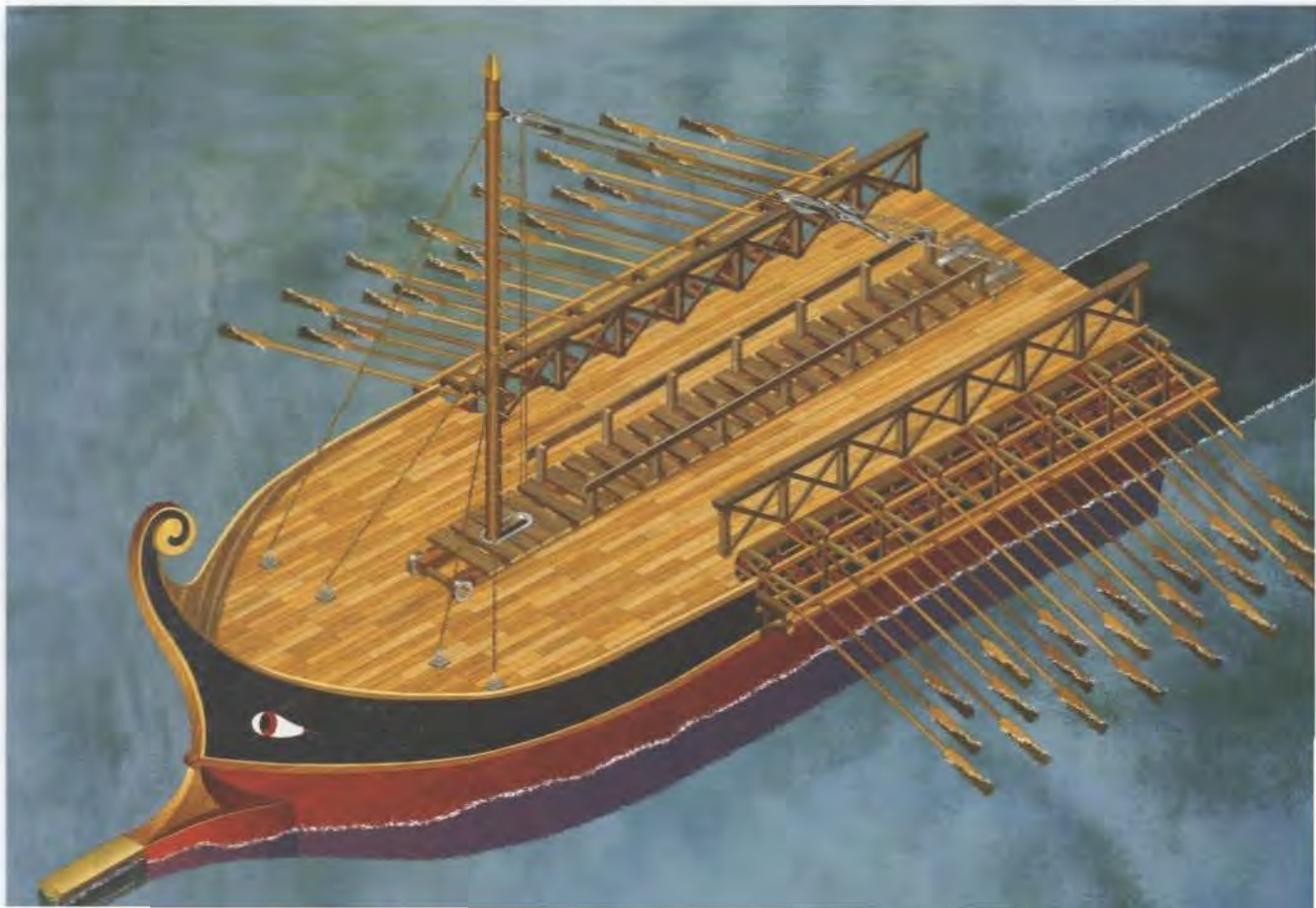
noeuvre the sails, the rudder, the various other devices on board and the launch weapons! In ancient times, the crew of a warship was systematically divided into officers, technicians, rowers and soldiers. The first were in command, the second navigated the ship, the third were responsible for propulsion and the fourth for combat. The ships, of course, were not identical just as they are not identical today in any fleet, but were amply differentiated according to intended use. Generally, the largest ships were, and still are, the most powerful. In some cases, however, ships were purposely smaller to decrease the weight-power ratio to the benefit of speed. A goal that in some circumstances was pursued by doubling the number of men at each oar. According to the chroniclers of the era, Roman war ships, like the Greek ones, were classified according to the order of oars, their number and the number of rowers for each oar. The last two characteristics, at least up to a certain point in time, may be considered equivalent.

From a construction aspect the:"*approximate ratio of 10/1 between length and width typical of the polyreme designed to reach maximum speed was maintained up the end of the era of oared warships. Specialists today generally agree that the lengths reached by such ships were very close to the maximum values that could be reached with wooden constructions. In fact, it seems that for the even slimmer triremes, the limitations of wood construction were even exceeded. Though a complex system of mortise, tenons and pins united the planking of the ship in such a manner that the stress was distributed evenly over the entire hull, it was not prudent to have a trireme set out to sea without first reinforcing it with large cables encircling it from stem to stern and that were subjected to a considerable tension by a capstan. We do not know exactly where such cables were placed but it seems that the compression they provided was necessary to prevent the hull from weakening dangerously when subjected to stress. Wood ill adapts to joints subjected to stress...*"[36]

As for the transversal dimensions, the hulls were very narrow, barely sufficient for two adjacent rowers whose oars rested on the border of the bulwark. For reasons that are easily understandable the grip of the oars could not be too close to the fulcrum and so it had to be moved outward or the rower moved further inward. The ancients used both solutions simultaneously, without ever exceeding the aforementioned modest widths. The draught of these ships was also fairly small and barely exceeded half a metre, displacing a relatively modest quantity of water with consequent little hydrodynamic resistance, an advantage attained to the detriment of stability. Also irrelevant was the thickness of the planking, between 3.5 to 4 cm, of soft and light wood. From a structural perspective the stern lifted above the float line in a perfect arc, both bulwarks joining in a aplustre that, along with the mass, contributed to stabilizing the ship by increasing the moment of inertia. Contrary to Renaissance galleys, that in many respects were its direct descendants, the rowers of Roman warships rowed underneath the single deck, separate from the combat crew.

The consequent lowering of the barycentre improved resistance and, in extreme cases, permitted navigation through the late fall. The Roman warship therefore, with the exception of small single oar ships, had a flat deck similar to the modern flight deck. The only raised structure was the combat tower, often double, located toward the prow or stern, but certainly away from the centre. As for the masts, these were always hauled down before battle, as the large sail was an ideal target for incendiary projectiles.

From a historical perspective, the prototype of the polyreme was a hull with a single order of oars. Only around the middle of the I millennium B.C. was any significant progress made, first by adding a second order of oars, then a third, thus originating the trireme. What made the distribution of rowers assigned to the various orders along the sides more compact was their staggered placement. For the men on the upper row were located almost one half metre in front of those immediately below, and even more advanced in respect of those on a still lower row. One can only imagine the absolute synchronism required to prevent the oars from jamming: this explains the great care taken for simulated exercises on land, as mentioned regarding 261 B.C., and that would still be conducted more than two centuries later by Marcus Vipsanius Agrippa for the crews of Augustus' fleet.



The Roman Navy independent of Foreign Technology

In 260 B.C. when problems with Carthage become more complex, the command of the fleet passed to Consul Gaius Duilius. The consul:"*seeing that his slow ships were easily dodged by the agility of the Carthaginian ships and that this rendered the valour of the soldiers null, invented the «war instrument called corvus».*"[37] Once again Roman pragmatism was fully manifested in developing the legendary corvus (raven) for boarding: this instrument was destined to transform a battle between ships into a battle between men. Thanks to this device, as all historians pointed out, the legionnaires could board enemy ships and engage the crew in combat similar to land combat. Certainly when first introduced it must have been very effective but it is equally certain that once the enemy ships learned its function they were careful not to approach, nullifying its effectiveness. This explains why there is no mention of it in future battles! These are the characteristics of the device:"*a pole 7.1 meters in height and 22 cm in diameter was erected at the bow. This pole had a pulley at the top and at the bottom a ramp made of cross planks, attached by nails, 1.20 meters in width and 10.7 meters in length. In this ramp was an oblong slot and it went around the pole at a distance of 3.6 m from its near end. The gangway also had a railing on each of its long sides as high as a man's knee extending along both sides for its entire length. At its extremity was fastened an iron object like a spike with a ring at the other end, and resembled those machines used to grind wheat. To this ring was attached a rope with which, when the ship charged an enemy, the sailors raised the ravens by means of the pulley on the pole at the end of the antenna and let them down on the enemy's deck, sometimes from the prow and sometimes bringing them round when the ships collided broadside. Once the ravens were fixed in the planks of the enemy's decks, grappling the ships together, if they were broadside on, they boarded from all directions but if they charged with the prow, they attacked by passing over the ramp two abreast: the leading pair protected the front by holding up their shields, and those who followed secured the two flanks by resting the rims of their shields on the top of the railing.*"[38]

As in the past, this fleet also, so tenaciously built and armed, was deactivated once it had achieved victory over Carthage, as naval policy was not yet part of the Roman strategy.

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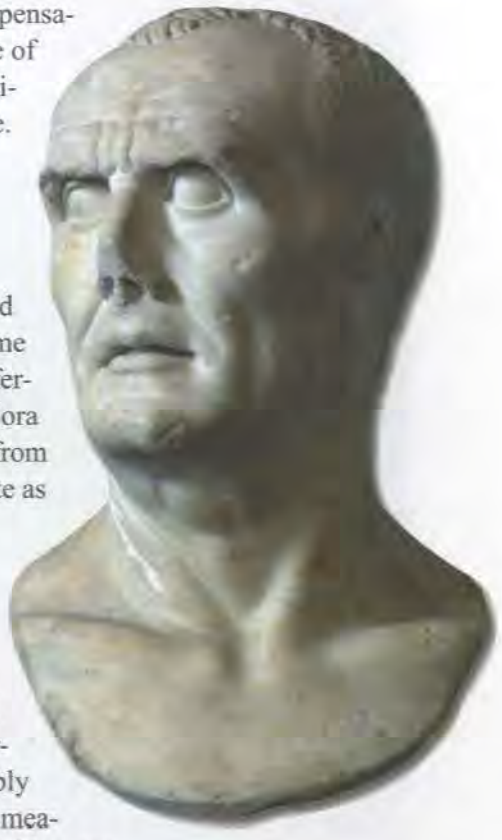
The Wages of the Legionnaires

As the legionnaires' periods of engagement continued to increase, it became necessary to compensate them in some manner. Many of the conscripts had a family to support and many others fields they could no longer personally cultivate. Thus, at least initially, more than wages in the true sense of the word, it was a reimbursement of expenses, and partial at that. To give an example, during the time of Polybius, an infantryman received an average of 5 asses per day versus 12 for a labourer in Rome. The stipend thus amounted to 150 asses a month, equal to approximately 10 dinars, which made the annual pay 120 dinars. As we have no modern equivalency for this amount, we can only note that the "as" was a coin of fused bronze, introduced during the IV century, and only later put into circulation. With the reforms of Augustus it was forged in pure copper, and its value became equal to ¼ of a cestertius. In any event the entire annual stipend was not sufficient to buy even one inexpensive slave.

This notwithstanding, the military career was beginning to become more attractive, especially since the insignificant wages were supplemented by the frequent spoils. The distribution of booty among legionnaires was common, as were the frequent rewards in money for the most valorous. It was also the custom

to increase wages after a victory: but the real attraction was the compensation provided upon conclusion of military service, which was a piece of land plus the sums withheld monthly from their pay. Obviously the higher the rank the higher the wage and this was an additional incentive.



Busto di Caio Mario.
Bust of Caius Marius.

Consul Gaius Marius

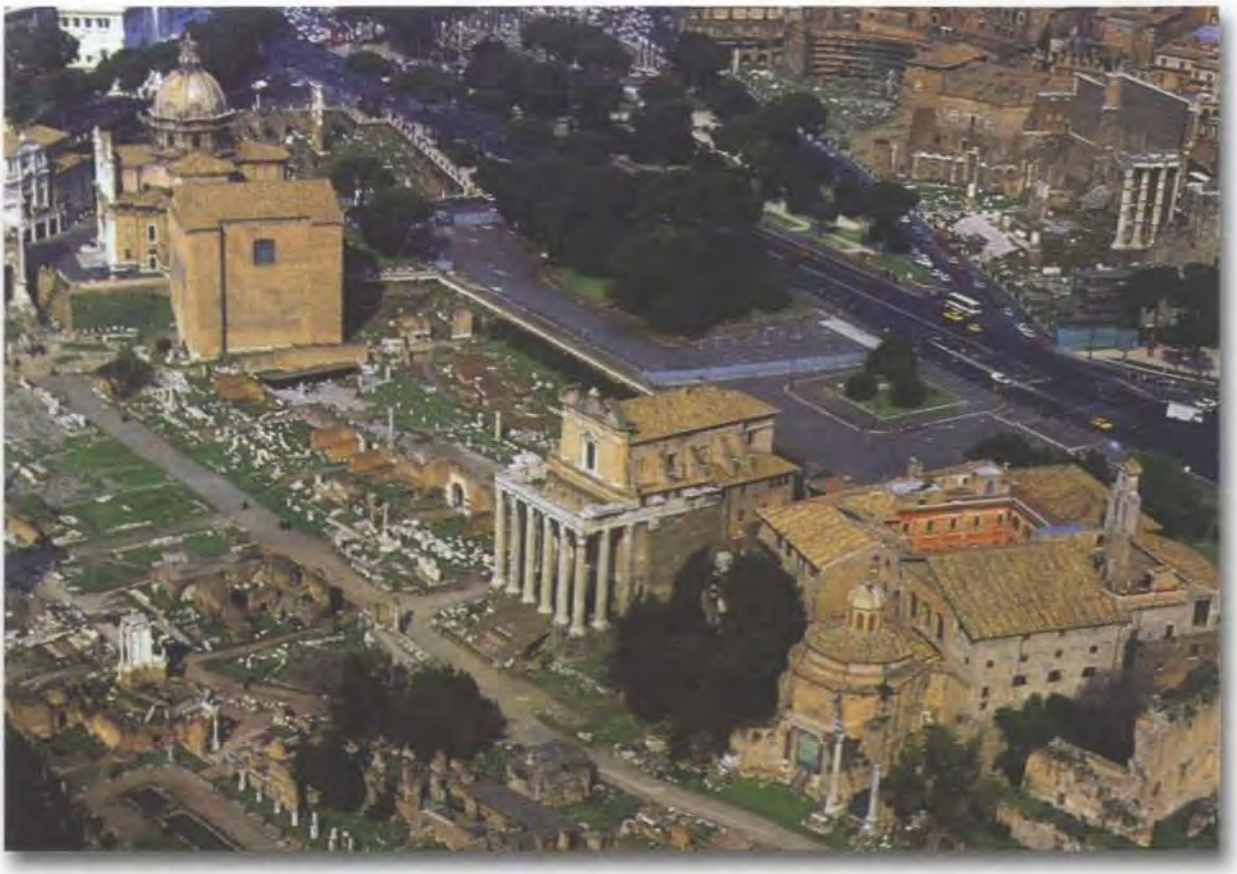
Many are familiar with the Cistercian abbey of Casamari, founded by the Benedictines; others may also know of the district of the same name in the municipality of Veroli located in the centre of a small, fertile valley at a height of approximately 300 m, on the road between Sora and Frosinone. Very few however know that the name takes its origin from the Latin *Casa Marii*, or house of Marius, a name attributed to the site as the birthplace of the illustrious Roman commander, Gaius Marius.

Son of a humble farmer, he was born around 155 B.C., and began his military career as soon as he was of an age to be conscripted. The remains of the ancient pagus of the era are allegedly directly underneath the abbey built in the beginning of the XI century. Although he was admired for his unquestionable leaderships skills and for his great personal merit in the Spanish wars and even though he earned a great number of meritorious decorations, he could not justifiably hope in a consequent and adequate social advancement because of his meagre patrimony and plebeian origins. The first deficiency was resolved by reckless and fortunate speculations; the second by marriage to a young member of the Julian family. Thus he became first praetor and later governor of Spain and, in 107 B.C., was appointed Consul, a charge that was confirmed for four consecutive years between 104 and in 101, an event without precedent in the history of the Republic.

He is remembered for his basic honesty and loyalty to the institutions, his courage and tenacity, but certainly not as a true military genius. Similar to his legionnaires in temperament, taste and culture, he loathed ease, excess and the Greek language, which he did not bother to study, contrary to his wealthy colleagues: a Roman of another era! With such rude merits, the hostility of aristocratic society was a foregone conclusion! His brilliant military victories over the Teutons and the Cimbrians brought him back to Rome in 101 to celebrate his triumphs and he acquired immense prestige. Which allowed him to effect a permanent reform of the army.

The Situation at the End of the II Century B.C.

The Punic wars and the Macedonian wars of almost the same era, although victorious, had negative social effects. The resulting immense profits in slaves and territorial acquisitions exasperated the already vast difference that existed between the great landowners and the small proprietors. The mass of forced labour working in the immense properties of the former wiped out the income of the latter in just a few decades. Desperate and miserable they left their lands and went to Rome, in rapidly increasing masses, where they attempted to survive as best they could. Since entry into the legion was contingent upon we-



alth, that general and progressive impoverishment corresponded to a just as obvious contraction in the number that could be enrolled. This phenomenon soon reached dangerous levels as the number of men in the military diminished, leading to a decrease in the level of wealth required for enrolment.

With the failure of the proposal submitted by many, but opposed by the Senate, to grant citizenship to the allies, and with the defeat of the agrarian reforms proposed by the Gracchi brothers, the situation precipitated. The:"*adsidui began progressively to decrease, both due to a natural demographic regression and because members of the wealthy middle class began to slide toward the proletarii. Inversely, the number of the latter - those citizens who, since they were not members of any of the five classes of wealth, were not constitutionally entitled to bear arms – increased to such an extent that they could no longer be ignored for purposes of conscription.*

For the second Punic War, in order to enrol a greater number of the proletarii they had decreased the minimum level of wealth of the fifth class required for enrolment from 11,000 to 4,000 asses, and this amount was still valid in the era of Polybius, toward the middle of the II century. B.C. The increasingly deteriorating situation during this period – from the year 159 the numbers of the census begin decidedly to decrease – obligated them once again, around 133-125 B.C., to lower the minimum requirements of wealth for the fifth class from 4,000 to 1,500 asses: 76,000 proletarii were transformed into adsidui, as confirmed by the census of 125 compared with that of 131, but this could not change reality, which gravity did not escape the now concerned ruling class.

During those same years... the Gracchi brothers attempted to rectify the economic-social situation... the condition of the soldiers in that era is revealed by the well known affirmation of Tiberius Gracchus,

to the effect that those who were considered the masters of the world did not even have the hovel possessed by animals, and by the military law of Gaius Gracchus (123 B.C.) prohibiting the State from making withholdings from the stipendium, given the precarious condition of the soldiers.

Thus in 107 B.C., when Gaius Marius was forced to abandon the traditional system of conscription by tribes because of the war in Numidia and recur to voluntary enrolment, the composition of the army was already, de facto, proletariat. The measures implemented by Marius, similar to the institution of the tumultus and that already had precedents in the conscription of 134 B.C., did not appear to be revolutionary and in reality did no more than confirm the preceding de facto status."[39]

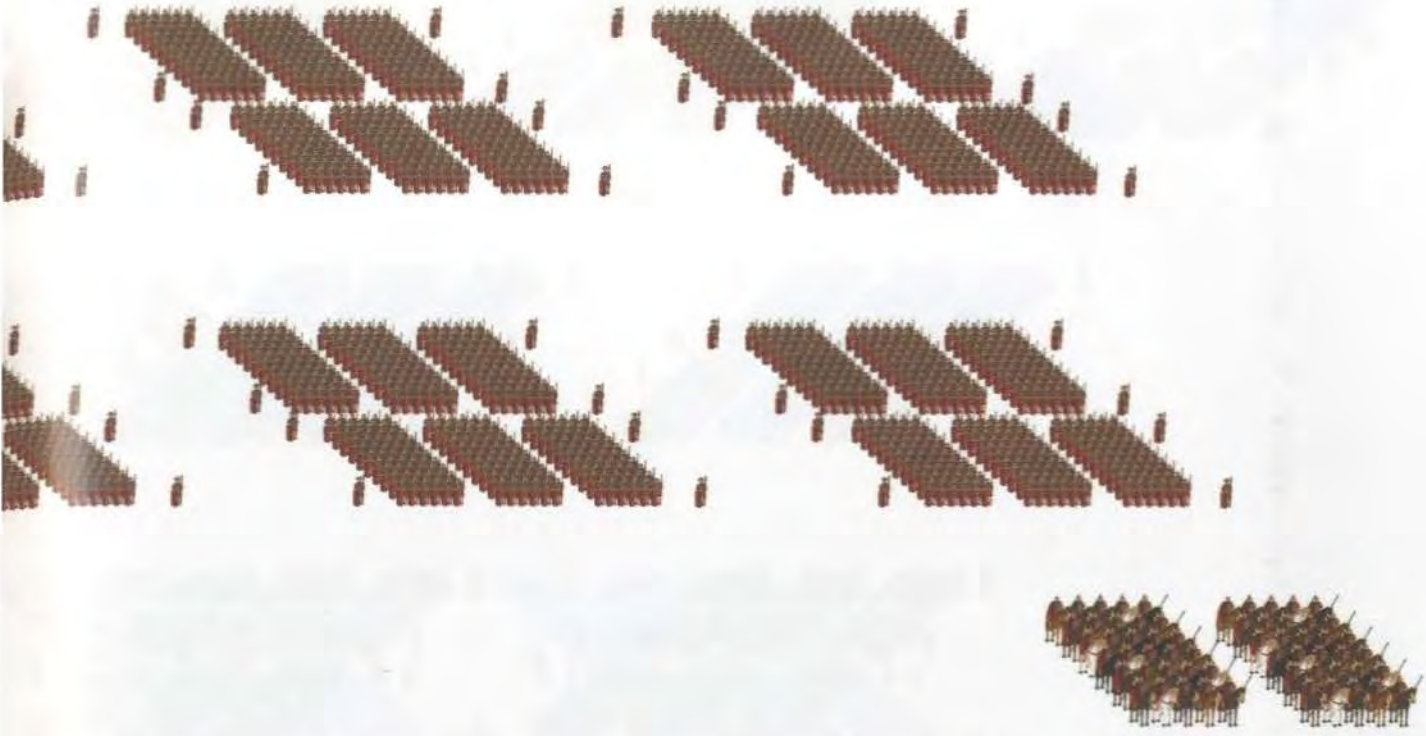
This modification, only apparently technical, had considerable political consequences as henceforth the legionnaires were no longer greatly involved in the political matters of Rome but exclusively in their career, their recompense and their general. Loyalty was increasingly associated with those who enrolled them rather than with the Republic, an entity viewed as progressively more remote and foreign. A further consequence was the amalgamation of the numerous Italic ethnicities into a single military class, the first national unification of the Roman state, that from a merely technical aspect was still the city of Rome! Thus there emerged a paradoxical duplicity, on the one hand the survival of an archaic urban political dimension and on the other the advent of an Imperial military dimension, antithetical contexts that the Marian reforms began to resolve. From another perspective "*the popular faction benefited from the fusion that had now taken place within the army among different elements of the various Italic regions, as it could now defend common economic and social needs that, as stated, the army personified... [In general therefore] in the I c. B.C. popular leaders and military leaders are identified... with the organisation of the masses against oligarchy- or with their use if, like the army, they were already organised – giving rise to an accommodation between the needs of the Imperial state and the structure of the ancient citizen State, something that the military had already achieved in its own field when urgent need had transformed it into a professional army, around the II c. B.C.*"[40]

The Marian reforms also led to other consequences intrinsic to the military career. According to ancient and confirmed tradition there was a clear and insurmountable separation in the Roman army between legionnaires up to the rank of centurion, who today would be called junior officers, and the superior hierarchy or senior officers. No centurion, for example, could ever hope to attain the rank of *tribunum militum* or *praefectus equitum*, whatever his merit or wealth. With the Marian reforms, opening the way to a professional army, this preclusion was no longer absolute and incontrovertible. A not irrelevant number of cases confirms promotions from the lower ranks to higher ranks, especially when supported by conspicuous wealth that even opened the door to the equestrian rank.

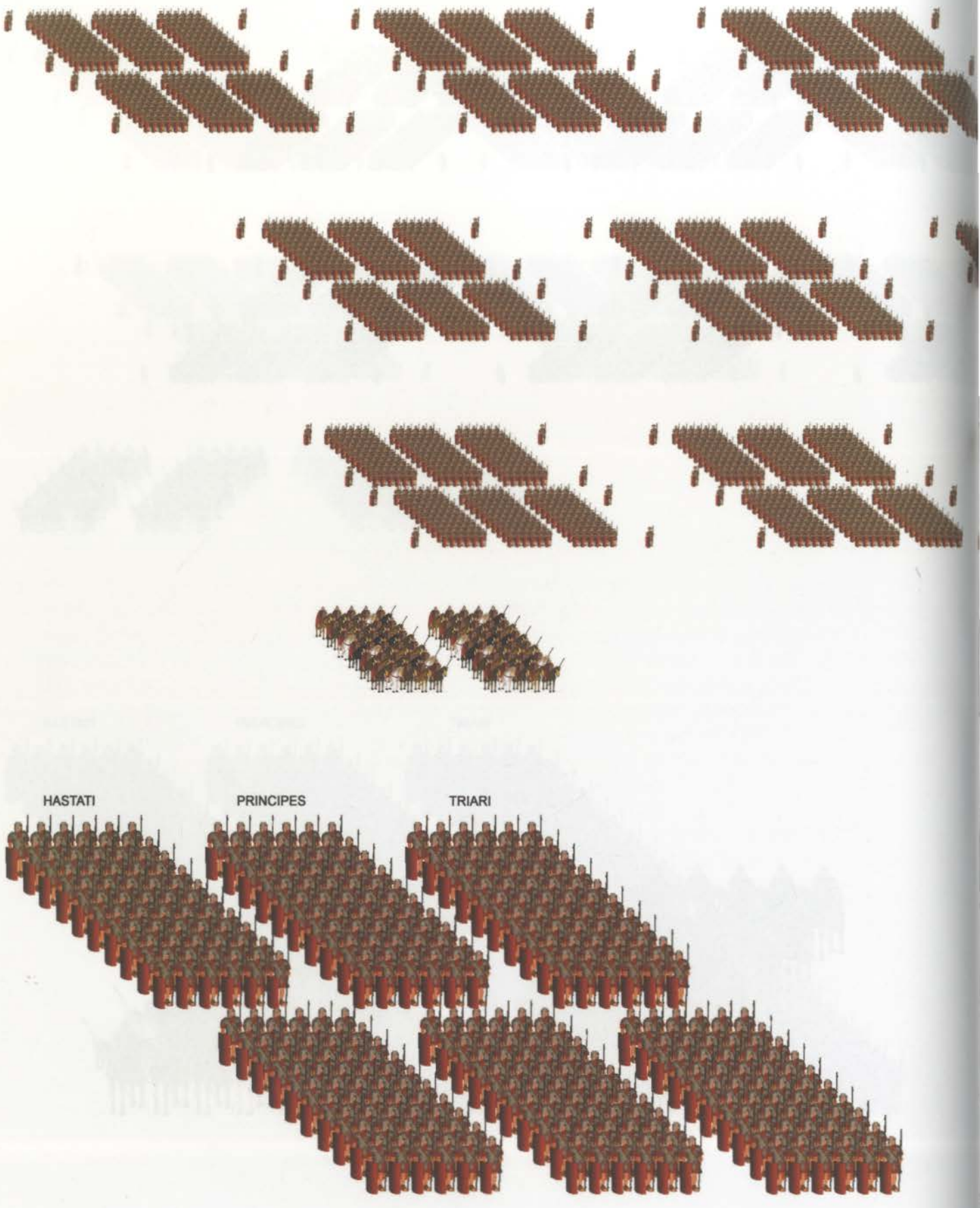
The Legion of Gaius Marius

If the Marian reforms had extraordinary political effects they had even stronger tactical ones. His legion, recently emerging from the war in Spain, was clearly different from the preceding maniple organization and more suited to the new tasks and new methods of combat. The maniple legion that had defeated the Macedonian phalanx did not confirm its superiority when it had to confront the Cimbrians and the Teutons. Its quincunx arrangement of staggered maniples, was not able to repel the initial powerful attack with its typical tactic of opening the battle with a violent assault against the centre of the enemy formation. And the wide spaces between the maniples allowed the attackers to rush forward and penetrate the soldiers of the front line until they reached the second. At that point resistance began to diminish, as all the individual maniples, especially those of the front line, found themselves isolated and

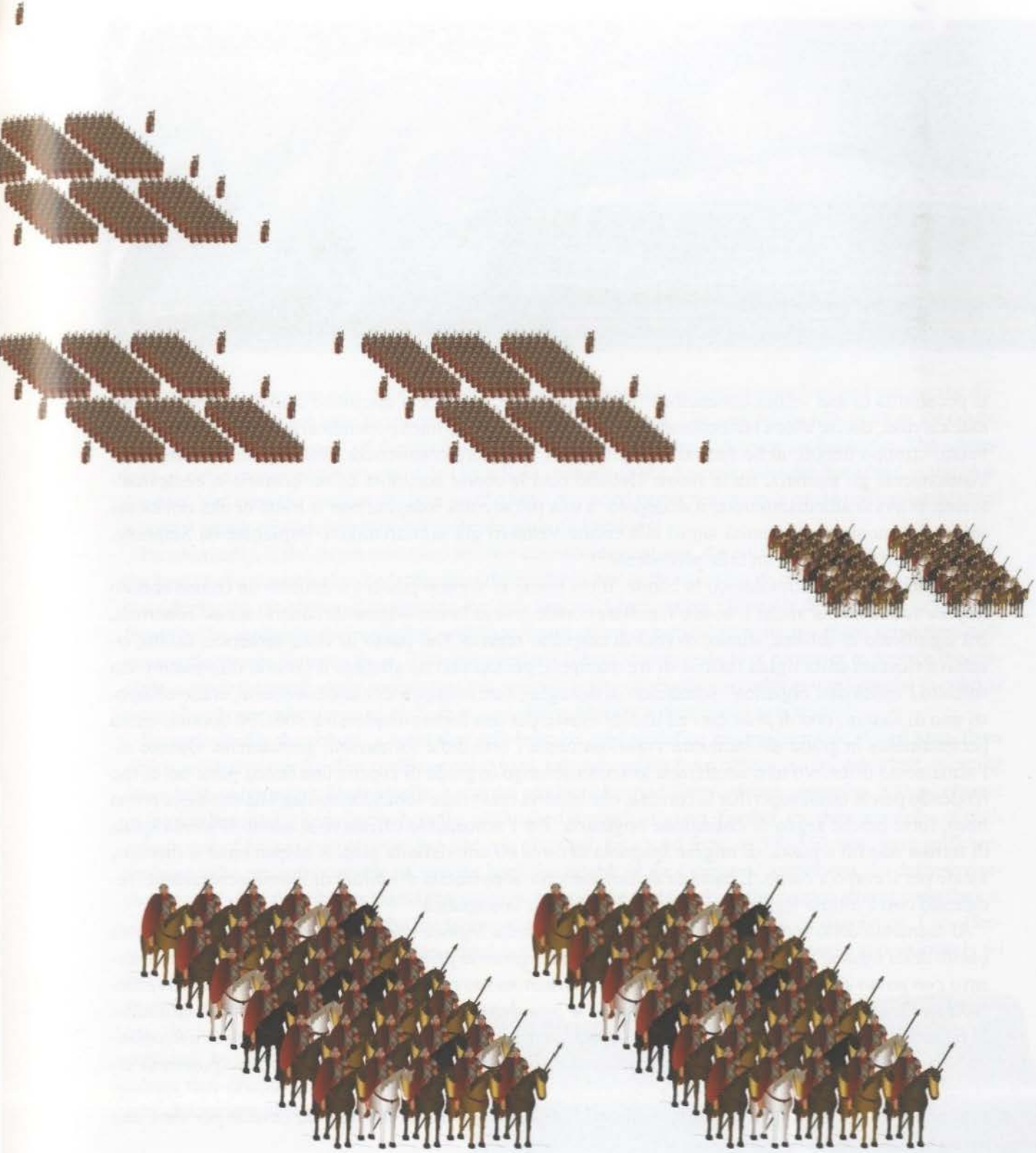
Schieramento legione coortale mariana di 5000 uomini.
In dettaglio una coorte di 3 manipoli formati ciascuna di 2 centurie da 60-80 uomini. Ala di cavalleria formata da 2 turme di 30 cavalieri.



Legion cohort formation of the Marian period, numbering 5,000 men.
A cohort of 3 maniples, each consisting of 2 centuries of 60-80 men. Cavalry wing consisting of 2 squadrons of 30 horsemen.



Schieramento legione coortale cesariana di 5000 uomini.
In dettaglio una coorte di 3 manipoli formati ciascuna di 2 centurie da 60-80 uomini. Ala di cavalleria formata da 2 turme di 30 cavalieri.



Cavalry cohort detachment of the Caesarian era, 5,000 men.
A cohort of 3 maniples, each consisting of 2 centuries of 60-80 men. Cavalry wing consisting of 2 squadrons of 30 horsemen.

surrounded by a human tide. Mutual support became impossible among themselves and among the different lines that did not have the necessary strength to resist alone. The conclusion left no room for doubt: the staggered arrangement of the maniples was too weak to sustain and resist such a tactic. The advantage of rapid manoeuvrability provided by a light maniple in the Apennine theatre backfired in the Nordic one. Not even the ancient phalanx would have provided better results as it could not have sustained a central attack of such impetus and violence without breaking!

Paradoxically, if the threat frustrated the two classical formations, the solution came from their union: the basic tactical unit had to be larger than the maniple, but without losing its characteristic speed! After considering the problem and evaluating the deficiencies, Marius very rationally decided to reinforce the front line by replacing the maniples, with larger and stronger tactical formations, at the same time narrowing the spaces between them. Thus emerged the cohort, composed of six centuries to replace the maniple: a more thorough study reveals that this was not really an absolute novelty as units similar to cohorts were already periodically used by Scipio, providing Marius with a useful precedent.[41]

Etymologically the cohort, a word that will later be used to define an impenetrable closed area, from which we derive our familiar cortile or court yard, takes its origin from còhors, accus, cohortem, meaning array, host, or large unit. Numerically, it was the product of a rigid fusion of three maniples, with no change in the fundamental criteria but only in the established strength of a unit. Further, the three maniples of each cohort, one of *hastati*, one of *principes* and one of *triarii*, for a total force of 300-350 men, were sufficiently large to be perfectly capable of driving back the assault of the Germanic formations. As defensive armament, all used the oblong shield that covered most of the body making the cuirass almost superfluous, although it was not abandoned by the hastati of the front line, perhaps as a sign of distinction. For offensive armament they used the solid two-edged iron sword of Spanish origin that measured approximately 60 cm, defined as gladius hispaniensis or ibericus, ideal for hand to hand combat. The hasta was later permanently replaced by the more advanced pilum, thus eliminating the last link with the ancient phalanx formation.

Scudi oblunghi in vari bassorilievi: in alto a sinistra, Teramo; in alto a destra, Scafa, Pescara; a fianco, Cuma.

Bas-reliefs of oblong shields: top right, Scafa, Pescara; side, Cuma.

At the moment of confrontation:"*the battle scheme of the cohort legion was not much different from the maniple legion, in which the first and second line were engaged: the first advanced at the double, spreading out and ready for combat with the sword, immediately following the launching of pili; la second line followed hard on as soon as the first line had completed its initial onslaught; the third was the reserve force that the commander used if and when he considered it opportune or necessary. The auxiliary wings remained subordinate and never had decisive roles, but they could distinguish themselves by valorous acts... The cavalry provided flank support and were used for reconnaissance, pursuit, rapid transport and often, dismounted, to assist in close engagements*". [42]

The passage from maniple to cohort also diminished the basic roles of the *hastati*, the *principes* and the *triarii*, now united into a single tactical unit. The names continued to exist, but from that time on they were used more to identify the respective centurions, with the definition *pilani* replacing that of *triarii*. The logic of the change is simple: as the *pilani* were the most expert and reliable legionnaires their name was given to the highest ranking centurions, while *principes* were the intermediate level and *hastati* the lower ranks. Thus:"*in each cohort, from the II to the X the ranks of the centurions, by order of importance, were now pilus prior, princeps prior, hastatus prior, pilus posterior, princeps posterior, hastatus posterior. The titles of the centurions of the first cohort, now called primi ordines, were slightly different: primis pilus, princeps, hastatus, princeps posterior, hastatus posterior. It is not clear if at that time the first cohort had five centurions as during the Imperial Era, or six (two primi pili). The decrease to five was probably due to the fact that the primis pilus bis (that is for the second time) was more useful as a general staff officer.*"[43]

This same reform was also responsible for the suppression of the *velites* and the abolition of the legionnaire cavalry, both the result of the elimination of the related categories of wealth. They were replaced

by special units of auxiliaries and allies: the equites that remained in each legion, perhaps numbering 120, were used for various tasks, but not tactical ones. Marius initiated yet another innovation, destined to play a very important role in the future and partially foreseeable in the strong interdependence between a legion and the commander who had enrolled it: the granting of a specific identity. From this moment on each legion had its own "aquila" or 'eagle', an emblem that arose to the level of divine dignity, venerated in a special shrine as a numen legionis. For purposes of completeness we must also note the measures taken by Marius to accelerate the march of the legions, until then hampered by the great number of supply wagons that accompanied them. Not incidentally those slow convoys were defined as impedimenta, but as they were essential to feed the entire army, no commander had ever considered the possibility of decreasing their number. Not so Marius, who eliminated a great many of the wagons by loading supplies on the backs of the legionnaires, who then became known as the muli mariani (Marian mules).

Everything that an individual legionnaire had to carry, in addition to his military equipment, was supported by a special forked staff, called furca or sarcina, a term still used in many dialects of southern Italy. The contents of this backpack can be deduced from reports of the era such as that of Cicero [44] who wrote that the legionnaire, in addition to his own weapons, transported food rations for five days and whatever else he needed in the field, such as utensils like the mattock or the axe. The overall weight was estimated at around 26 kg, but more recent studies indicate that this

Re-enactement of marching scenes displaying the insignias and the legions' aquila.
18th century print depicting legionnaires with the forked staff.

may have even exceeded 40 kg! Some writers even reach approximately 55 kg: it is interesting to note that the French zuave during the second empire also carried backpacks containing 35 kg.

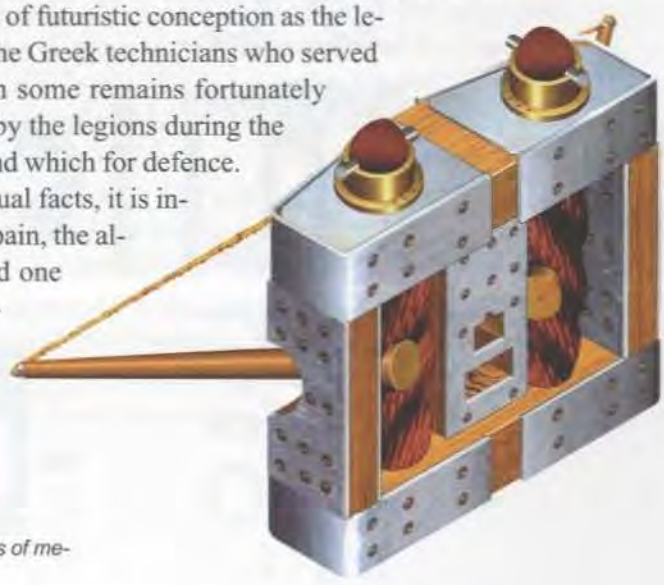
These weights varied according to circumstance and also according to the legionnaires. Not all were forced to carry the same equipment or the same objects, many of which were sufficient for an entire squadron. For example, it would be absurd for each legionnaire to carry his own dishes, his own grinder for wheat and to cook his own food individually rather than together with the eight colleagues with whom he shared the same tent! Nor could Marius' simplification eliminate all the carts as these were also needed for the war machines, field equipment, instruments, water reserves and fodder for the animals. According to some scholars, with such weights the legionnaire could cover a daily distance from 20 to 30 miles (48 km).

This calculation, though questionable, generally refers to distances on roads, that is, those that could be effected only after the roads had been built, something that came about once the conquest had been stabilised, and only to approach the base of departure for the campaigns. When campaigns were conducted in enemy territory they could not benefit from such infrastructures, making the travel and advance times much slower than those on a regular road.

The Legionnaire's Light Artillery

Shortly before the destruction of Carthage, in the days of its glorious and over-ambitious resistance to the Roman forces that were laying siege to its cities, all its citizens dedicated themselves to building launch machines and weapons. Every historical report tells of the sacrifice of the women who donated their hair to provide the catapults and ballistas with the necessary elastic coils for propulsion.[46] And when the city finally fell, the Romans captured a great number of such artillery, of various power and dimension. These were not unknown weapons nor arms of futuristic conception as the legions already had similar ones, if not better, thanks to the Greek technicians who served under them. We are not familiar however, apart from some remains fortunately found in Spain [47], with the specific equipment carried by the legions during the Republican era, nor which type used for field attacks and which for defence.

Putting aside the theoretical and concentrating on actual facts, it is interesting to reconstruct the pair of scorpions found in Spain, the almost intact one found in Mainz and the most damaged one discovered in Cremona. Specifically, these are propulsion devices that, in spite of their chronological diversity, appear to be absolutely identical and so



The relic found in Ampurias and virtual reconstructions.

Detail from the altar of Pergamus with one of the very rare illustrations of mechanical artillery.

wholly compatible that the loading flanges of the oldest could rotate in the housings of the most recent, despite the almost three centuries that separate them, with an overall tolerance of only a few millimetres [48] - proof of the high level of standardisation of these military devices. Furthermore, since all are perfectly compliant with the construction dictates of Biton, Philon and Vitruvius, they can be used as dimensional modules to complete the missing parts and restore the original characteristics of these weapons. Such an activity, once completed, permits an assessment of their actual ballistic function.

As for its strange name, this came from the characteristics of the weapons: a lengthened, slim shaft, a head, capitulum, with a pair of arms, in Greek chele, and a dart at the end, silent and lethal!

Il reperto di Colonia.
The relic of Cologne.

The Scorpions of the Republic

Around the VI c. B.C. the Greeks, in competition with the Phoenicians, established a commercial base to the north-east of Barcelona, christening it eloquently Emporion. Centuries later, after the Roman conquest of Spain, the city eventually found itself located along the extension of the via Aurelia, its name now Ampurias. The pacification of this region was neither rapid nor easy, as there was violent resistance by local tribes, the apex of combat reached between 147 and 138 B.C. with a harsh guerrilla warfare, better known as the war of fire, conducted by the implacable Viriatus, who defeated the legions several times. The fall of Numantia in 133 put an end to the fighting but it resumed with even greater brutality a half century later. This time the promoter was no longer a crude local brigand but a senior Roman officer of recognised valour, called Sartorius. He was murdered during a banquet a few years later, but not before he had inflicted serious additional defeats on the legions.[49] It is to the brief interval that separates the successes of Variatus and the death of Sartorius that we date the use and the destruction of the catapult, of which a partial one was found in Ampurias in 1912 and another, also partial, near Caminreal during the excavations of 1990. Thus if the loss of the first is related to the attacks of Viriatus, that of the second is attributed to the war of Sartorius.

These remains cannot be considered as fragments that miraculously escaped disintegration of the entire weapon, but only as component parts of catapults that could not be repaired. The deterioration of the respective loading flanges, modioli, indicates that they were not new spare parts. The first was found in 1912, in the excavations of Ampurias [50]: the relic was later interpreted as the propulsor of a Roman catapult from the middle of the II century B.C. In reality, what was restored from the remote past were simply the iron plates that covered the capitulum of a mid sized catapult, that perhaps even at the time lacked arms. That remnant allowed us to determine the method used to mount the elastic coils and to twist them almost up to the yield point.

The second relic [51], more recent and better preserved, provided the entire metal component of a similar motor unit and the site of discovery indicated that the relic was from the I century B.C. Though basically similar to the preceding one in concept and size it had several improvements, evidence of a perfectionism applied to a machine already considered effective. And that it was reputed as such is confirmed by a third remnant found in Mainz, also from the propulsion unit of an Eutitona catapult. The sizes were the same, as

were the general features and details: with one remarkable difference, the use of bronze for the plating rather than iron and the three frontal plates to better protect the coils. A better constructed weapon, perhaps because it was to be used in more rigid climates, dating approximately to the I century A.D. Just slightly older were the remains of a fourth propulsion unit from a catapult of analogous power, found in Cremona in 1887, but only correctly interpreted a century later. In this case the remnant consisted of eight modioli of identical form and size, and a frontal plate acting as a single shield for both coils. As this weapon also was from the I century A.D. the use of a single armour confirms the tendency to greater protection for such artillery, already noted in the Mainz propulsor. The plate bears the following inscription [52]:

LEG IIII MAC

M VINICIO	TAVRO…O
II	CORVI NO…S
C VIBIO RVF	INO LEC
CHORAT…	…RINC…

The correct Latin version being:

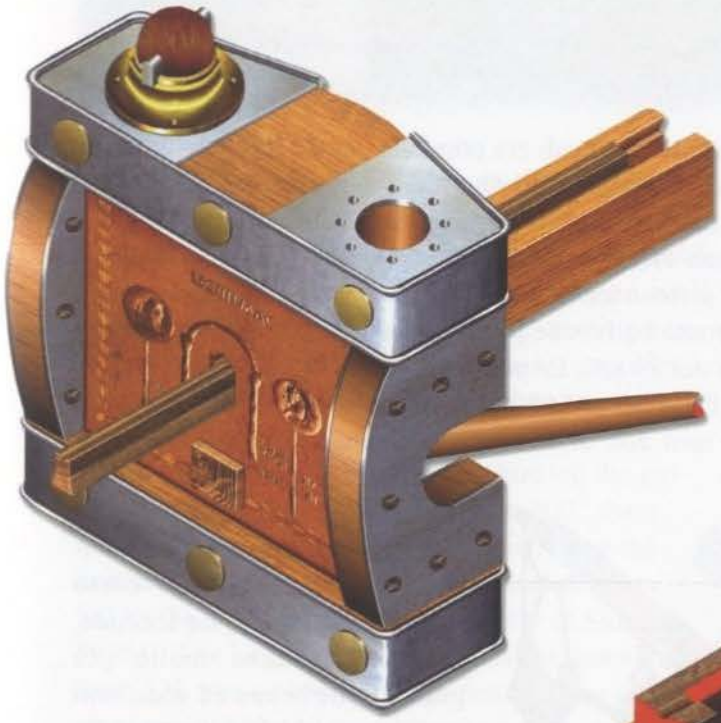
LEGIO QUARTA MACEDONICA
MARCO VINICIO ITERUM, TAURO STATILO CORVINO
(COS) CONSULIBUS
CAIO VIBIO RUFINO LEGATO
CAIO HORATIO PRINCIPE

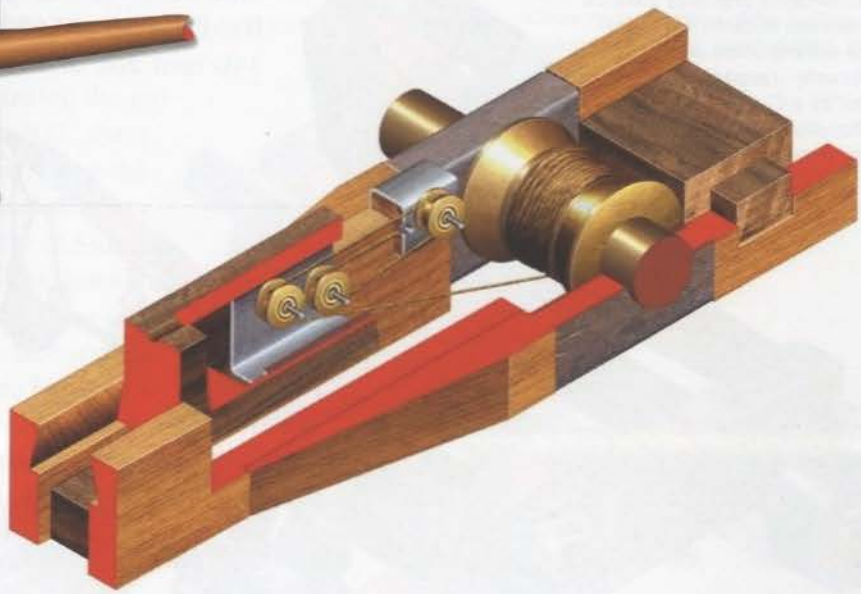
which translated means:

PROPERTY OF THE FOURTH MACEDONIAN LEGION
UNDER THE SECOND CONSULSHIP OF MARCUS VINICIUS, AND OF STATILIUS TAURUS CORVINO,
UNDER THE COMMAND OF GAIUS VIBIUS RUFINO, LEGATE (PROPRAETOR OF UPPER GERMANY),
GAIUS ORAZIO BEING THE PRINCEPS OF THE PRAETORIUM

A catapult of the IV Macedonian Legion, built during the Imperial Era, another perhaps from the Legio XXX whose stronghold was located in Xanten, along the Rhine, also of the same era, basically similar to the two Republican ones! Explicit confirmation of the excellent level of Roman light artillery as early as the II century B.C., and that will be radically transformed and reinforced with a new propulsion unit only after the II century A.D.

As for Roman heavy and siege artillery all indicates that this was basically similar from a formal and mechanical aspect but, obviously, larger. Such weapons were rather like magnified light artillery, according to Vitruvius. There is, however, one area of doubt regarding a strongly parabolic firing weapon, almost a prototype of the mortar, referred to as early as the II century B.C. in Greek technical treatises. The language should not deceive us as Greek was the language of the more advanced technicians, even those of Roman origin or at the service of the Roman army. Thus we can easily conclude that what was written by Philon on the so called monoancon, or single arm, weapon was widely known and used even by the legions: this was a large weapon with a single coil and



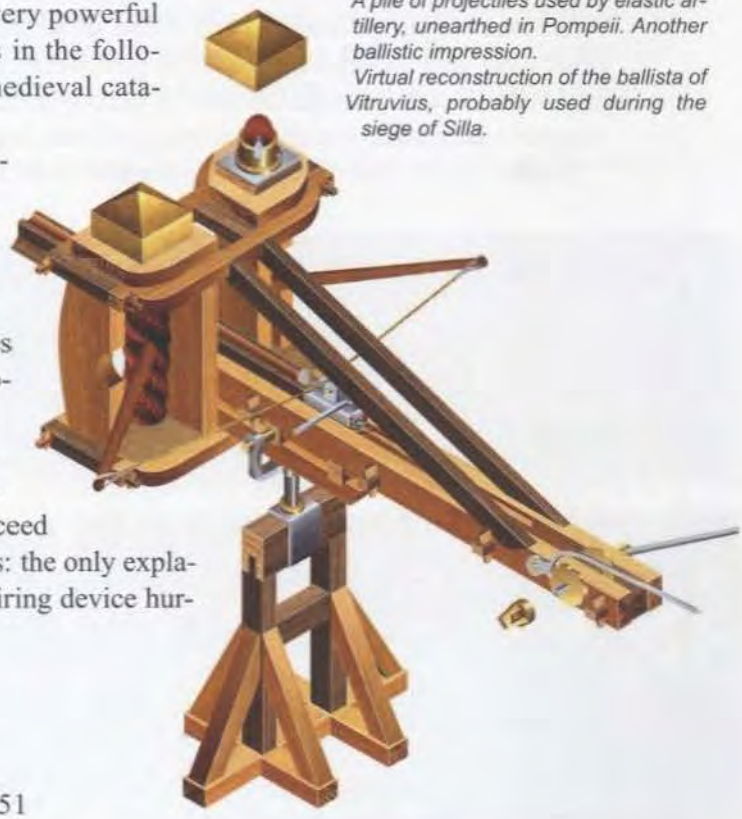


arm. Its frame was very similar to the tension saw, with an arm in lieu of the listel. At one end was an automatic-opening sling, commanded by a centrifugal force containing a projectile, almost always a heavy stone. Its curved firing during a siege made it possible to strike the structures behind the walls, creating a very powerful effect. This machine will receive many upgrades in the following centuries and will eventually become the medieval catapult and trabuch.[53]

If there were ever any doubt regarding the existence of an onager as early as the I c. B.C., there is a rather singular proof in Pompeii. Along the northern section of its walls are hundreds of prints left by the ballistas of the siege artillery of Silla in 89 B.C. The larger ones have a diameter that varies from 120 mm to 160 mm with penetrations of approximately 120-140 mm along the extrados of the walls. Inside the city, furthermore, were found hundreds of stone balls, probably hurled during this siege. These are much larger than the former and exceed the maximum calibres of those used by the ballistas: the only explanation is that a weapon with a strongly parabolic firing device hurled them inside the walls.

Una catasta di proietti di artiglieria elastica rinvenuti a Pompei.
Un'altra impronta balistica.
Ricostruzione virtuale della balista di Vitruvio, utilizzata probabilmente durante l'assedio di Silla.

A pile of projectiles used by elastic artillery, unearthed in Pompeii. Another ballistic impression.
Virtual reconstruction of the ballista of Vitruvius, probably used during the siege of Silla.



Tactical Observations on Roman Camps

Whatever its original connotation, the Roman legionnaire camp must be viewed as an actual mobile base, a reality that was constantly present and never neglected or carelessly prepared even in the worst operational contexts. The difference was not in its geometric form or its functional system, but in its overall solidity, as it was commensurate to the presumed duration of the sojourn and the expected use. No matter the work that was required, the legions did not do without their camp, not even for a brief nocturnal pause in the course of a forced march or rapid relocation. It was a hard and fast rule of legionnaire field operations, under any circumstance, to pass half the day marching toward the enemy and the other half pitching camp. A standardized and moderately fortified structure even in its most elementary configuration and for the most ephemeral of stays, very similar to a temporary fortification or a gigantic cuirass put on at every stop!

Many scholars consider such a laborious and meticulous process to be an excessive waste of time and energy, though the fact that this process remained in force for so many centuries in the most combative and organised army in history certainly provides an indication of its importance. Every evening the legionnaires had to seek shelter inside a fortified rectangle. These were camps set up at the end of every period of march, obviously for temporary use, *castra estiua*, and that were abandoned the following morning. They differed in the consistency of their defences, in size as some were used for entire seasons, or even for years, and were called permanent camps or *castra hiberna*, *statiua*, and in the material used which were often massive walls of stone or brick. These are the structures that have left the greatest archaeological traces still perfectly evident today.[54]

To better describe a Roman encampment, which had reached its basic configuration as early as the beginning of the III century B.C., it should be noted that:"*in the Republic and at the beginning of the principate, the most characteristic of the Roman art of war had been the temporary camp. At the end of a day of marching the legionnaire troops were assembled in one site, previously chosen with great care, and here, working for three hours and more, they excavated a defence moat all around, erected a rampart, made a palisade using prefabricated elements (pila muralia) and finally pitched*

Alife, Caserta: zenitale del 1943, durante un bombardamento e foto aerea attuale.

Alife, Caserta: aerial view from1943, during a bombing raid and modern day aerial photograph.

their tents. According to the archaeological remnants preserved in certain sites the perimeter of the encampment could have various forms, while the interior layout seems to have followed a fixed scheme: the tents were grouped by units around a wide T shaped road, that went through the centre of the camp in the direction of the area reserved for the headquarters. Between the interior side of the rampart and the first row of tents was a large open space. Modern critics have often observed that the security provided by this type of camp was not commensurate with the enormous effort required to construct it after a day of marching, as the mobility of the Roman army was no doubt significantly reduced by this long and tiring routine. Nevertheless, even though a fragile palisade composed of two pointed portable poles, the moat only three Roman feet deep, and the rampart only a meter ninety high, could not do much to contain a strong attack, it would be a mistake to underestimate the tactical usefulness of the defences typical of the temporary camp.

Even modest fortifications of earth (and pointed poles) would have been sufficient to stop the assault of a cavalry charge (and usually horsemen did not attack such obstacles); furthermore, the open space sixty Roman feet wide between the outer perimeter and the first row of tents, provided a significant protection against the arrows and spears hurled by the enemy. Furthermore, the wide roads inside the encampment would have allowed, in the event of an attack, to assemble the troops in an orderly manner, avoiding the confusion and panic that are common when a mass of persons must move rapidly in a limited space full of obstacles.

Modern scholars are doubtlessly correct in highlighting the tactical deficiencies of this type of defence. It certainly was not common practice of the Romans to consider the besieged encampment as a fortress: once assembled, the troops normally came out to combat the enemy in an open field, where the infantry attack forces could be fully effective (only the auxiliaries with launching weapons could achieve good results fighting behind the perimeter of the camp). However, it was principally the non tactical functions that made the Romans' temporary camp much more than a simple defensive perimeter, conferring upon it an importance without comparison in the modern art of war: this was, in fact, an extremely effective psychological expedient.

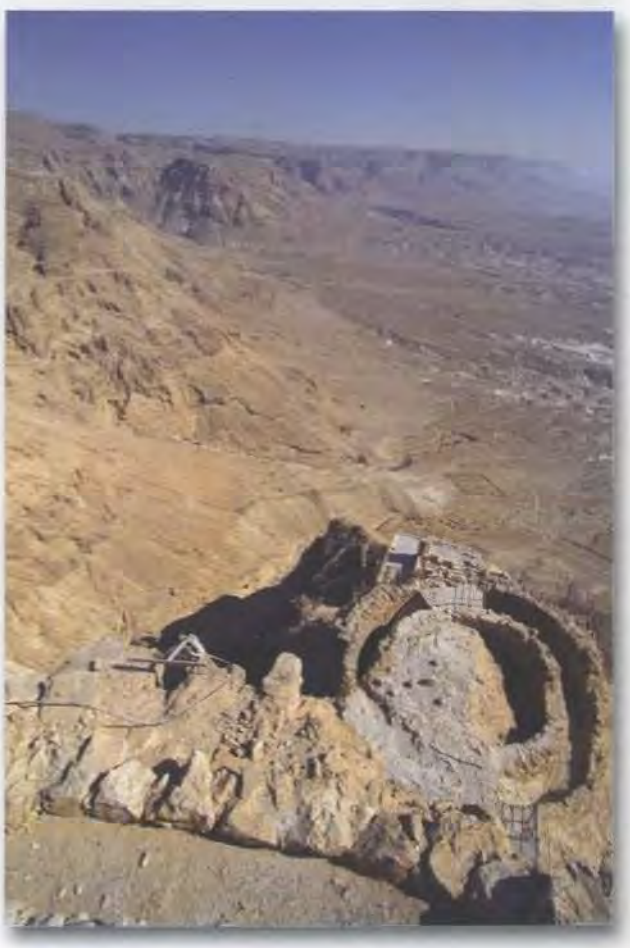


Foto aeree degli accampamenti romani visti dalla fortezza di Masada, Gerusalemme.

Aerial photograph of roman camps seen from the fortress of Masada, Jerusalem.

First, a marching army in hostile and often unknown territory, would feel secure in the familiar structure of an encampment. With the moat, the rampart and the palisade to keep the sporadic natives and ferocious beasts at bay, the soldiers could wash, prepare their equipment, converse and relax in a comfortable atmosphere. This feeling of security allowed them to sleep serenely and to then be ready to march or battle on the following day. Thus the brutalisation and the fatigue accumulated by the troops engaged in a military campaign could be partially compensated by the restoration of a good night's sleep.

The temporary camp was also an expedient to lessen the amount of work. It is true that much work was required to build it, but thus fortified it could be adequately controlled by a minimum number of sentinels. The typical goal of night operations is to prevent the enemy from sleeping; even if inflicting minimal damage, the noise of surprise attacks night after night could provoke a progressive deterioration of the physical and mental conditions of the troops who were the object of such attacks, especially as an increasing number of soldiers would go without sleep to carry out patrol duty. In this case also, the temporary encampment offered the advantage of preserving the energy of the soldiers, since, if we can trust our sources, sixteen men out of a century of eighty, were used each time."[55]

Temporary fortification

To get an idea of the fortifications that camps used for even just one night or barely longer, we must turn once again to Flavius Vegetius. Scrupulous researcher that he was, he collected and reported the basic reminiscences of such structures beginning with the technique used for their construction. According to his words, the legionnaires began by superimposing regular courses with:"*the sods uprooted* ...[forming] *a vallum upon which they placed the palisade, or wooden stakes. The sods of earth containing the roots of the grasses, are cut around with iron tools: they are made six ounces* [15 cm] *high, one foot wide* [29.55 cm] *and half a foot long. If the land is not compact and cannot be cut with a brick, then a trench five feet wide and three feet high is excavated; this is used to make an interior embankment so that the army may rest safe and without fear ...*"[56]

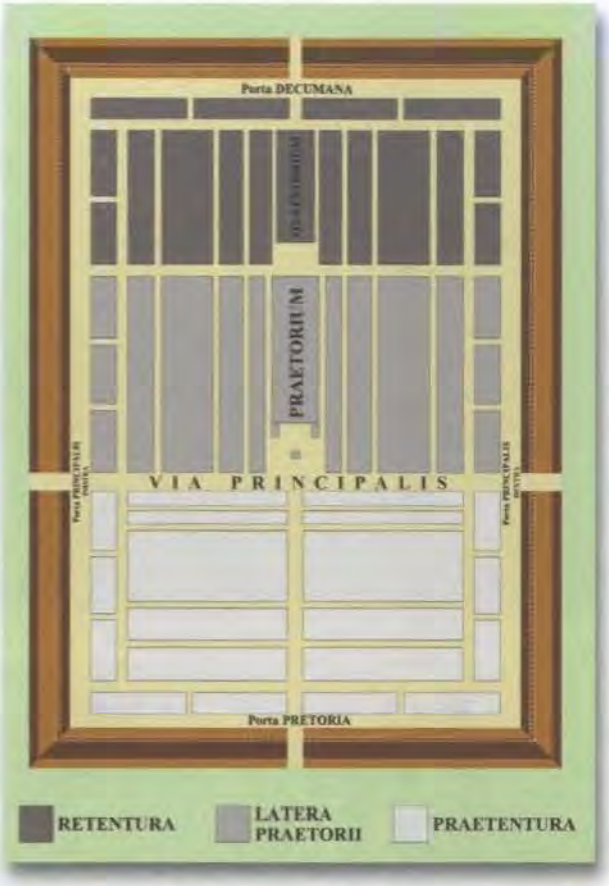
Re-enactement of legionnaires building a camp.

Regarding its construction:"*it has been stated that the temporary encampment was a guarantee from the tactical aspect, for if the Roman troops were defeated on the field of battle they could always seek refuge in the camp and prepare to fight another day. But this could occur only if the defeated troops had an intact camp nearby, little likely, since defence fortifications were usually ignored once the camp was abandoned. However, this observation is valid if taken in a more subtle manner: nothing is more difficult that to transform defeat into an orderly retreat, avoiding disorderly flight, thus the camp of the preceding night could be the natural point of reassembly, ready to once again deploy the army in an orderly manner.*

In this manner the Roman temporary camp united the tactical advantage of a bivouac with the ease offered by lodgings, in addition to having a guarded perimeter that, if needed and with a little more time and work, could be transformed into a fortification. The typically Roman institution of temporary camp was therefore a determining factor for the strength of an army, whose peculiar nature consisted in its elastic resistance in moments of effort."[57]

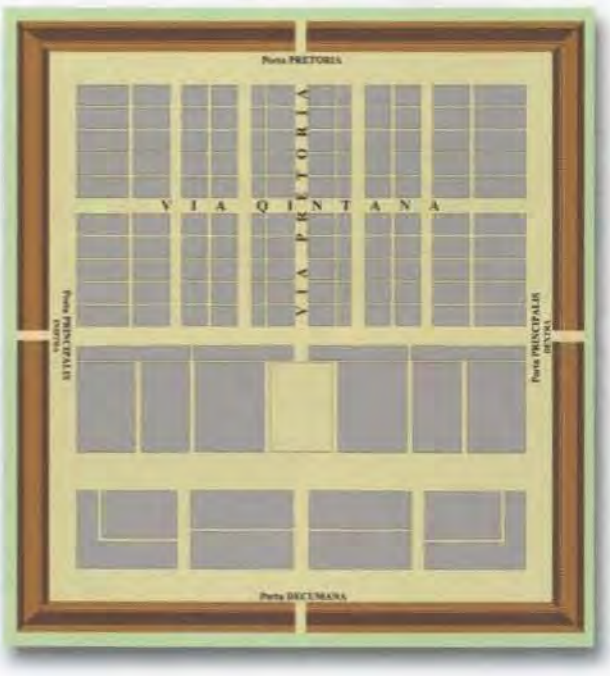
It is important to extrapolate and highlight some facts from this quotation. First of all, the definition of temporary camp, that at first sight may appear to be a play on words. In fact, since it was continuously build again every day in the same form, it could actually be considered as the same camp in a different location. Second, it is certainly true that the Romans destroyed the camp when they abandoned it in the morning, but this practice should be understood to mean simply a deactivation. Since the site consisted of a clearing surrounded by a small rampart with a moat in front, to destroy it would have meant levelling the former in order to fill the latter, a useless and counterproductive activity that would take up the better part of a day. More logically, the legionnaires simply removed the elements of the palisade inserted into the aggere, in order to re-use them for the next encampment.

Regarding the palisade, made of oak or some other wood, the poles were square in shape with very sharp points. A fair number of these have been found in military sites and were taken to be sections that could be dismantled and reassembled, either to reinforce the palisades around the camp or more likely to make a rudimentary barbed wire to be placed in the most vulnerable points. The two types of protection providing access to the camps, a frontal barrier called titulus, and an oblique entrance called clavicola that forced the enemy



Stampa settecentesca con legionari intenti alla costruzione del campo.
Schemi di campi legionari: sopra, secondo la connotazione arcaica; sotto, secondo un'interpretazione di Polibio.

18th century print of legionnaires intent on pitching camp.
Drawings of legionnaire camps: above, according to ancient methods; below according to an interpretation by Polybius.



to expose his left flank, similar to the older porte scee, required a strong palisade to prevent forced entry, but one that could be dismantled.[58]

Thus reactivation of a camp that had been abandoned shortly before would have been extremely rapid, as it was sufficient to reposition these poles. And it is also possible that in the event of a retreat or routing in unknown territory the commanders might want to bring the legionnaires back to the last camp, no further for obvious reasons than half a day's march and that the passage of the previous day had levelled the ground and made the march less difficult. It should also be pointed out that the location of a castra was not decided during the march, but carefully selected by scouts who took into account that it could not be further removed than the normal distance travelled daily, that it had to be flat and, most important, adjacent to a source of water, a lake or a large spring. Although our most detailed information is from a later era, the basic uniformity of the practice allows us to adopt it also to outline the procedures of the Republican Era.

The Camp Layout

The first duty was to carefully plan an itinerary that provided such opportunities, then to identify the best site day after day. This task was the responsibility of various officers and of the metator, who applied the same principles and criteria as for a permanent camp, also considering, when possible, that the area not be overlooked by a hill or other height to avoid coming under fire. The ideal would be a slightly inclined area that favoured the natural flow of the waters and sewage and provided better ventilation.[59] A good definition of the legionnaires and technicians responsible for preparation of the camp and of their respective tasks is the following:"*initially, the objective during expeditions was to have a solid camp each night. The metator, who preceded the troops, had to find the right site and then split up the units; the geometer (librator) checked the horizontal features of the space and his skills were often utilised also to help the artillerymen and, for example, to dig canals; the surveyor (mensor) marked the location of the dormitories, delimited the surfaces belonging to the legions and could replace the architect...*"[60]

As for the actual activities involved one may assume that, approaching the end of the march, but more likely around its middle, a tribune and several centurions would already have reached the site, much forward in respect of the head of the legion, or of the first legion in the event of a consular army composed of two,

Foto aerea di Aquincum, attuale Budapest.
Panoramica delle cinta muraria del campo di Xanten, Germania.

Aerial photograph of Aquincum, modern day Budapest.
Panoramic view of the defensive walls of the camp in Xanten, Germany.

perhaps at the same distance as the advance guard. There was therefore ample time to observe the surroundings, evaluate any danger, ascertain the suitability of the particular site in respect of the previous one, and given the absence of troops and wagons, to perceive even the slightest suspicious noise or absolute silence, even more suspect. Even Flavius Josephus agrees regarding the extreme attention given to the location of the camp and the scrupulous care observed in selecting an optimal location, levelling it and tracing its perimeter. Everything was minutely regulated and approved from the moment the march began at dawn.

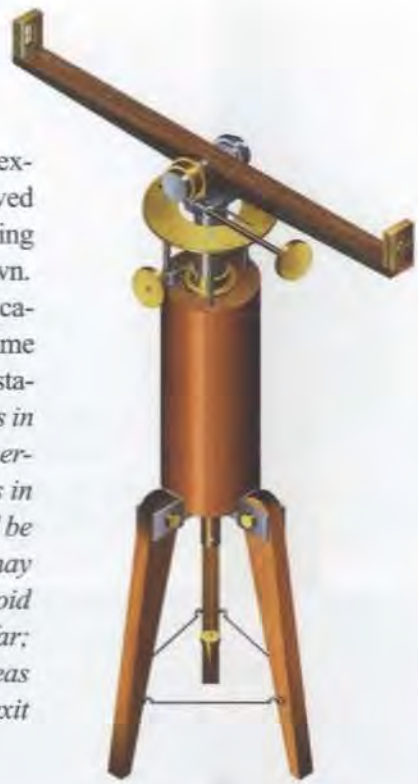
A residual echo of the meticulous care given to the correct installation of the castra can be deduced from the ordinances mentioned by Vegetius Flavius, at a time when these structures were rarely made. The famous writer of military treatises stated, with some nostalgia, that:"*in the vicinity of the enemy, the camps are always in a protected area, where there is an abundance of wood, hay and water; furthermore, if a long sojourn is expected, select a healthful area. And avoid any hills in the vicinity that, if occupied by the enemy, may facilitate his attack. Care should be taken to ensure that the camp is not subject to any flooding from torrents, that may cause problems to the troops...*"[61] He continues saying that:"*they must also avoid that in the summer... the water may be contaminated or that healthy water is far; that in the winter there is no lack of forage or wood... [and] that it is not in areas that are ruined or off the road and, in bringing the siege to the enemy, that the exit is not difficult; that no arrows can be hurled from heights by the enemy...*"[62]

Reduced to simple rules, these precautions may thus be summarized:

→ IDENTIFY THE SITE ACCURATELY, BY THE CHARACTERISTICS MENTIONED ABOVE
→ ENSURE THE AVAILABILITY OF POTABLE WATER
→ ENSURE THE LAND CAN BE DEFENDED
→ DELIMIT THE AREA

AAt that point a legionnaire surveyor placed in the centre of the selected site a topographic instrument, the groma, consisting of four plumb lines, and looking through it staked 90° angles. This provided precise orthogonal directions to trace the perimeter of the camp and its interior roads, delimiting the spaces to pitch the tents. The central point of the camp was also called the groma.[63] In later eras the groma may have been replaced by Hero's dioptre, much more precise and insensitive to the wind. The instrument also allowed them to pitch camps that were not necessarily orthogonal, a configuration confirmed by some residual traces.

These stringent limitations, especially in rough areas, considerably limited the areas suitable for the installation of a castra. Which contributed to reducing the normal range of the daily march: and, in fact, it would be absurd to suppose that the exhausting work of advancing upward with the weight of equipment should then be accompanied by an increase in the distance to be marched because of a lack of suitable sites! To have an even vague idea of the equipment that a legion had to bring with them, it is sufficient to remember that they needed, first of all, more than 500 tents, some of which were quite large: all with heavy supports and accessories.



Ricostruzione virtuale della diottra e della stadia descritte da Erone.
Virtual reconstruction of the dioptre and stadia described by Hero.

The Legionnaire Tents

Roman writers of treatises specified the form and the characteristics of military tents, whose sizes varied according to destination. The tent of the legionnaires, called papilio, and that in many aspects is similar to the modern Canadian tent, was formed by two inclinations, similar to a roof, supported by a wooden trestle. Wooden stakes measuring approximately 40 cm were used to fasten them to the soil using special cords. Their square layout measured 12 feet per side, 10 interior and 1 exterior for anchoring, covering 9 square meters with a maximum height of approximately 1.80 m and 1 m high along the sides.

Access was provided by two movable pieces of fabric: in this tent lived eight men, *contubernium*, with all their personal effects and weapons, in close proximity. Since its layout was 9 sqm, or 3x3 m, placing 4 men with their heads facing the two opposing sides, each man had an area of 70 cm. And, considering that their average height exceeded 1.60 m, their legs had of necessity to intertwine! It was impossible to go out during the night without disturbing the entire group: this only if their objects were hung along the frame of the tent, so as not to occupy any space on the ground. But reality must have been much worse, perhaps to purposely frustrate any laziness.

The fabric was cowhide, a thick leather resistant to bad weather, but also the least suited to ventilation. Since at least 25 of these hides were required for each tent, when added to the stakes and ties the total weight was approximately 30 kg. All the tents, even underestimating their weight, came to about twenty tons, requiring at least fifty wagons to transport them.

Scena della Colonna Traiana nella quale si distinguono delle tende di un campo legionario.
Ricostruzione delle tende in un campo legionario.
Stampa settecentesca che mostra la disposizione dei soldati sotto le tende da campo. È da considerarsi praticamente immutata dall'epoca romana.

Scene from the Trajan Column depicting the tents of a legionnaire camps.
Reconstruction of legionnaire tents.
18th century print displaying assignment of soldiers in tents. Practically unchanged since the Roman Era.

Seasonal Camps

If the above was obligatory for temporary camps, known as *subita tumultaria castra* or *aestiua*, the perimeter fortification for all the others had even greater and more numerous characteristics, especially when they were in enemy territory or near the enemy. In all these circumstances the individual centuries were ordered, according to the division of tasks established by the commanders of the camp and by the *princeps*, to station themselves along assigned segments, and after placing all the shields in a circle and the baggage around the standards, to begin the excavation of the moat, without putting down their individual weapoms. The triangular shaped moat with the apex at the bottom, was nine, eleven or thirteen feet wide at the top, which could increase to seventeen if there was the risk of particularly violent enemy attacks. The preference for an odd number measurement must be related to the need to leave a width of one foot at the bottom thus simplifying the geometric subdivision. When the excavation was finished, branches and pointed trunks were placed on the excavated soil bordering the trench, forming an aggere or agger.[64]

If the camp was to be used as a forward base for operations in enemy territory and had to remain in the same place for a long time, it was defined as *castra stativa*. These were heavily fortified camps often surrounded by thick crenellated masonry walls, interspersed by slightly jutting cylindrical towers. Even when the castra stativi replaced the wooden huts that in turn had replaced the tents, with masonry structures, the general layout was more or less the same. It simply became larger as it had to contain, in addition to the above constructions, also the enormous stables for horses and other animals, immense storage sites for food, forage deposits, shops and in some cases, even infirmaries.

Dimensions of Legionnaire Camps

In addition to the two types mentioned, there were a great many other types of Roman camps, though the general layout remained the same. The factor common to all was the constant of usage, something that never failed in field operations, as reported by Polybius for the Republican Era and Flavius Josephus for the Imperial one. It was Polybius who wrote, with great abundance of detail, of the characteristics and dimensions of the castra that during his era had to accommodate even a consular army of two legions. Though:"*the manuals for laying out camps still provided instructions on how to pitch camp for four legions of an army commanded by both consuls. The Polybian description of the Roman camp of the era has led to a vast literature from the XV century onward. Walbank maintains that the most convincing explanation so far is that of P. Fraccaro, who believed that Polybius used a Roman vademecum containing the layout of a typical camp. The 'typical' camp was still the camp for four legions; but Polybius describes only half. The other half is identical, but reversed (arranged 'back to back'), having only the base line in common with the first. Writes Polybius: «Whenever the two consuls with their four legions are united in one camp, we have only to imagine two camps back to back, the junction being formed at the encampments of the extraordinarii infantry of each camp who are in the rearward agger of the camp. The shape of the camp is now oblong, its area double what it was and its perimeter equal to one and one half»*".[65]

A dimensional idea of a camp for large units is also provided by Hyginus who generally still follows the traditional canons and prescriptions. In his opinion a large encampment capable of lodging the regular army, the auxiliaries, the cavalry and even the contingents of naval forces, had to have a rectangular layout and measure m 687 x 480 m. Inside the units were positioned differently and, even more curious, legionnaires much more amassed, to the point of having only a third of the space they had in the Polybian

encampment.[66] This last observation appears extremely significant, as it proves that the Romans were not at all inclined to increase the dimensions of their castra beyond a certain limit, perhaps because they became indefensible or, more likely, because the correct layout required extremely rare environmental characteristics. From a practical point of view, we have the following empiric formula for the size of the camps:

$$l=200\sqrt{C} \quad L=1.5\,l$$

where the length in feet of the short side of the camp, l, must be equal to 200 times the square root of the number of cohorts to be lodged, while the long side, L, must be equal to one and one half times the short one. Apart from the restrictions imposed by size there were also those connected with the availability of water. Given the presence of so many men and animals, the immediate vicinity of water was essential. In some exceptional cases, when it was not possible to make camp on the shore of a river, a common solution, they built canals, often underground, to connect the camp to the closest spring and to thwart any surprises. These almost always led to large cisterns as according to the living habits of the Romans water was precious not only for drinking.[67] A base camp, therefore, had to be able to accommodate two to four legions and very rarely and only for extremely serious strategic reasons could it be located far from a river. The essential condition for this was absolute control of the surrounding territory, as they had to supply water using barrel wagons.

In questa pagina: veduta interna della Piscina Mirabilis, la cisterna che alimentava la base navale di Miseno.
Nella pagina a fianco: rievocazione di legionari presso un fiume.
On this page: interior of the Piscina Mirabilis, the tank that supplied the naval base of Miseno.
To the side: re-enactement of legionnaires near a river.

In conclusion, the formation of a camp was a standardised procedure, but certainly not an approximate one nor one accomplished without conviction, as all the legionnaires, from the last soldier to the consul, were perfectly conscious of its importance. As for transporting the equipment to make camp, the tents to be pitched and other elements indispensable to its defence one must suppose that in the era in question, it was transported by pack animals rather than wagons as there were no roads and the wagons available at the time were ill suited for travel on rough terrain or the strongly inclined land typical of Italy. It is significant that even in the modern era:"*the need to open roads through fields required that numerous labourers be at the head of the column, thus the origin of sappers; there was also a need to provide the columns with safe and intelligent guides: officers of the general staff led the way for the troops, (in France the: marécheauz de logis from which comes the word logistic)*".[68] For this reason there was an unusually large number of quadrupeds that slowly decreased only during the Imperial Era. The Caesarean legion usually had 600 pack animals and at the siege of Athens, Silla used a approximately 20,000 mule-drivers.[69]

Army on the March

To conclude with the section on camps, surely the most original Roman military structure, another fundamental aspect in the study of the legions concerns their method of marching and relative speed. The successes of war and the deterrence they succeed in imposing were very often based on these two factors. Unfortunately there has been much misunderstanding on this issue, confusing both time and space, almost as if the speed of march on the excellent consular roads could be equal to the speed maintained prior to their construction. Or imagining large units moving at a rigidly cadenced pace, something that only happened in the last few centuries. It is because of these misinterpretations that it is essential to provide additional data in order to truly assess the effective and extraordinary capabilities of the Roman army on the march.

Up to the advent of the railway and its use by the military [70], between the speed of travel of Napoleon's armies and Caesar's legions, very little had changed as physical resistance to fatigue, hunger and thirst, as well as muscle power, are physiologically unchangeable. With this in mind, and according to classical sources, Roman troops left after a very early breakfast, long before dawn, which in the summer would be around five our time, and marched for almost half a day. Considering that in the summer the day lasted about sixteen hours, they marched until thirteen hundred hours approximately. The rest of the day was used to build the camp, and for other military and personal needs.[71] Which would mean at least seven-eight hours of marching, interrupted perhaps by brief stops: but how much distance was actually covered in such an interval? And more important, how much distance could a large army cover with all its equipment and appurtenances? Before getting into specifics, we must remember that when a column:"*of marching troops is composed of various mixed arms, the pace can only be regulated to a certain extent as continuous stops and delays are inevitable as are backward movements and efforts to catch up. These different marching rhythms tend to tire the troops, harm the horses and needlessly lengthen the duration of the march*".[72]

The principal and most common expedient to avoid such inconveniences was to stagger the different units, leaving a moderate space between one group and another to act as buffer, even at the risk of lengthening the entire column. We could say "*that the satisfactory progress of a march depended on the progress kept by the head of the column. If this should inconsiderately hasten or slow its pace, the different groups lose their distances and clash into each other. Thus at the beginning of a march the head of the column must walk rather slowly to give time to the units that follow to enter the given column at the right distance; when crossing a strait, residential areas, narrow bridges, etc., it must quicken its pace to prevent stumbling and must slow down again at some distance from the strait so as not lose distances. In climbing, one must prevent the head of the column from slowing down excessively and avoid going too fast in the descent. If they do not prevent the soldier from slowing down in ascents because of the greater effort he is obliged to make, and to moderate speed in the descents, this would shorten or lengthen distances in the marching columns, tiring the troops and leading to inevitable disorder...*"[73]

Views of Roman roads.

Given this unquestionable, historical and timeless constant of all marching armies, in order to reply to the two queries formulated before we must assess the traditional marching configurations of the Romans, from the time they leave their camp to their arrival to the following night's accommodations. According to Polybius once again, after the third sound of the trumpet, the first members of the long column begin marching:"*in the front are usually placed the extraordinaries; and after these the right wing of the allies with their baggage and that of the extraordinaires. Their march is followed by the first legion with its baggage also; the second legion follows with their baggage and that of the allies, who are in the rear; the last in the order of march is the left wing of the allies. The cavalry now protects the rear of the corps to which it is attached, marching on the flanks of the beasts that are loaded with the baggage, keeping them together in due order and protecting them. When an attack is expected to be made upon the rear, while all the other bodies maintain their formation, the extraordinaires of the allies are posted from the head to the rear of the column.*

Of the two legions and the two wings of the allies, those that are on one day foremost in the march, on the following day are placed behind; that by thus changing their rank alternately all the troops may obtain the same advantage in their turn, of arriving first at water and at forage. There is also another formation which is used when immediate danger threatens, and the march is made through open country.

The hastati, the principes and the triarii are ranged in three parallel lines; with the baggage of the maniples in front, behind the first maniples those of the second, behind the second those of the third, so that the beasts of burden are alternated with the maniples. With this marching formation, if there is a danger, the maniples turning either to the left or the right advance from the place they occupied among the baggage, toward the front of the enemy. Thus by a single movement and at great speed the infantry forms for battle, except only that the hastati are perhaps obliged to make an evolution, while the beasts of burden and those that follow, thrown into the rear of the infantry ready for battle, are covered by them from all danger".[74]

Apart from the technical data and the reasons behind such scrupulous orders, what seems obvious, as previously for the camp, is that nothing was improvised, especially when marching through enemy territory. The movement of a consular army of two legions, such as the one just described, was a mathematical procedure with pre-established and mandatory configurations and movements, suitable both for normal and high risk situations. As for the role of the cavalry, this can generally be equated to that of shepherd dogs in respect of a flock: it prevented their dispersal while protecting them from any attack from wolves. Attacks, militarily speaking, of high frequency and low intensity. The cavalry was also entrusted with short range tactical reconnaissance.

In this regard Flavius Vegetius Renatus stated:"*when the army was ready to begin movement, the commander sent his trusted and experienced horsemen with the best horses to reconnoitre in front, in rear and on the right and left lest he should fall into ambushes... The cavalry march off first, then the infantry; the equipment, the baggage, the servants and carriages follow in the centre and part of the best cavalry and infantry come in the rear, since it is more often attacked on a march than the front...*"[75]

Apart from the use of low threat or high risk type of marching described by Polybius, the pack animals were divided into separate groups interspersed by maniples. This created safe areas that prevented close contact among the different groups and avoided terrorizing the animals during a not improbable and unexpected attack. This arrangement may be compared to the concept of water-tight compartments on board ships, when heavy doors are used for any area accidentally flooded to prevent the water from entering other compartments and risk of losing the ship.

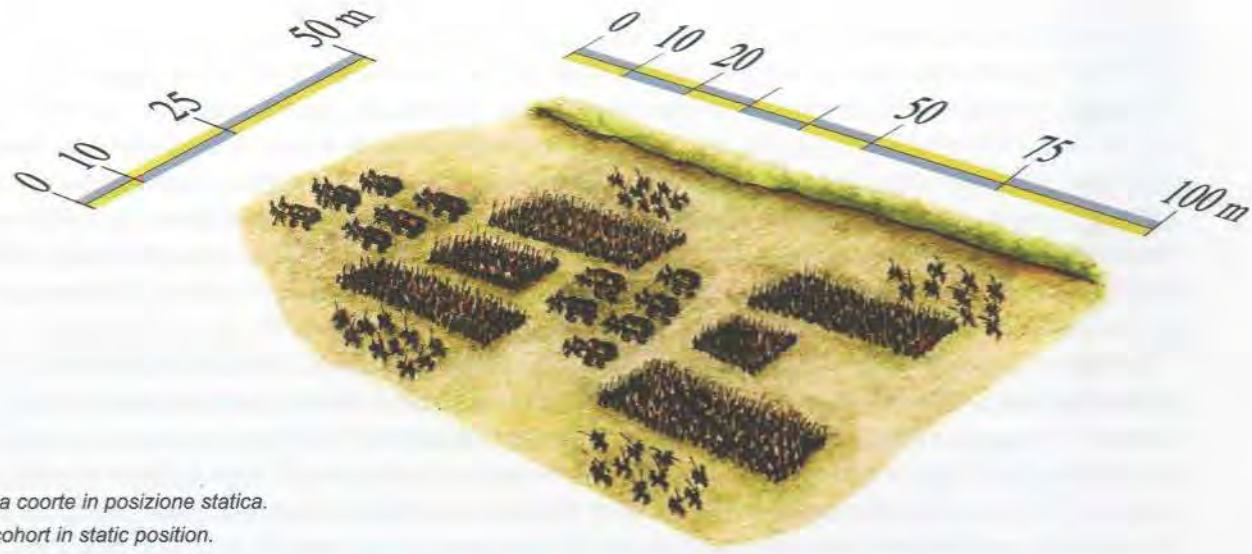
The rotation of legions at the head of the column permitted a more homogeneous foraging and water supply, but it also ensured an equal distribution of marching fatigue and of preparations for the camp.

Those who advanced first over unprepared land, typical of manoeuvres off-track, were forced to make a significantly greater effort than those following, as the latter found the road free of vegetation and other obstacles as well as a well-beaten trail. Also, by arriving several hours ahead, for such was the difference between the two ends of the column, they could begin the work required to set up camp. Regarding the availability of water along the route, it is implicit that the itinerary would consider this fact, as far as was possible, not so much for the men, who with careful rationing could in some manner make do, but for the numerous animals who could not sustain the fatigue or the heat without frequent and abundant water. Reason that forced them, in the event of a total absence of water, to camp where there was sufficient water, independent of the distance, or from a certain time on, to use cistern wagons, the various types of which we see illustrated in classical iconography. The advancement could never be protracted to the point of bringing men and animals to the limit of their strength. This would not only have created serious problems in making camp, but if attacked would have been the prologue to an irreparable defeat.

Length and Types of Stages

The stages of a march were systematically rather inferior than superior to the average marching potential of the legionnaires as they always had to have sufficient physical energy to repel an attack. This pressing need explains the reason for the closely located succession of night camps to the point that a man without a heavy burden would need only four or five hours to go from one to the other. And also explains why each legion was responsible for building the camp only on alternate days, while the other was responsible for defence.

We have often taken for granted the ability of Roman military formations to march even 30 km a day, and it is possible that such an extraordinary result may have been, in rare cases, actually achieved. More attentive scrutiny however reveals that that such rapid advancement could occur only along flat desert terrain or structured roads, without baggage and without heavy siege equipment. One of the reasons that Roman roads were the greatest military infrastructure in history is that they were intended to accelerate the movement of the legions. But this meticulous road network did not exist during the Republican Era, especially in the territories of Central Europe, and travel of even a few miles involving considerable difficulties for a group of merchants,



Una coorte in posizione statica.
A cohort in static position.

led to immense ones for an armed force and its numerous supply wagons. The difficulties of such travel can be deducd from one particular episode. In the II century B.C. in order for Cato to bring an olive press that had cost him 348 cestercians from Pompeii to his farm, about seventy miles away, he spent 280 for transportation! An enormous cost specifically because of the aforementioned difficulties. A legion certainly had to transport much greater burdens.

Static and Dynamic Length of an Army

It is a detestable but frequent and common experience to find oneself in traffic waiting for the light to change and to see that once it turns green, as fast as the drivers are in starting up, the group never leaves in a compact manner. A group of cars does not move like a train in which all the wagons advance simultaneously, whether mobile or immobile it is always the same and the interaxis remains rigidly unvaried. Cars react differently, for a group of immobile vehicles forms a line that is much shorter than the same line in movement. In general, therefore, we can conclude that the simultaneous movement of many vehicles ends up cramming them in the front and spacing them out immediately behind. A process that has suggested the picturesque definition of accordion traffic!

If we were to describe this singular anomaly geometrically, we could easily deduce the increase in length of the entire column in movement. Initially, it corresponds to the sum of all the individual start-up delays of each vehicle, multiplied by the average speed. Logical therefore that the greater the number of vehicles, the more time is lost and the longer the column. The movement of a column composed of a large number of men follows the same logic: in the static phase it extends for a length that is significantly less than during its dynamic phase. A dimension that increases inexorably with the increase in the number of its components as well as the number of starts and stops. For a large group the lengthening is such as to lead inevitably to chaos, as mentioned before. General Palmieri, in his famous Riflessioni cri¬tiche sull'arte della guerra, published in 1761, attempted to provide a lucid mathematical description of this phenomenon, writing:"*if the first line on the right (the march starting on the right)*

makes its first step one foot long, the second line must wait for the first to leave enough space to take an equal step, the third is forced to wait for the first and the second, and so consecutively all the others; so that the delay always multiplies and increases up to the end, resulting in two great inconveniences that we still note today: the first is the initial lengthening of the battalion, the second that it cannot advance together, in fact while one part is marching, the other is immobile: inconveniences that become increasingly greater the more numerous the number of troops undertaking the march..."[76]

Returning to the example of the vehicles stopped in front of the traffic light, to be even clearer, imagine there are a certain number of trucks, tractors and even horse drawn carts between the stopped vehicles. The simultaneous movement of the entire structure would be conditioned by the slowest and bulkiest of the vehicles, thus, if we were to take a dynamic measurement a few minutes after the light turns green, the total space occupied would not only be incomparably greater that its static measurement, but also much greater than if there were automobiles alone!

This dishomogeneity of the various components of a marching army contributed greatly to its length and its slowness, to a degree even greater than that caused by the number of the troops. These penalizing consequences stimulated entire generations of commanders to make ingenious logistical corrections and tactical improvements to reduce that deleterious characteristic that was further exasperated by the diversification of armaments. The only solution was the introduction of a cadenced march, but this innovation can in no way be associated with the march of the legions, as it was developed only in the XVIII century.

Ordinary March and Cadenced March

When we speak of marching, our thoughts are immediately directed to the well known one-two cadenced rhythm typical of military units of any type and size. This is not only the emblematic feature of the military but also the most obvious manifestation of the obtuse de-humanisation of an institution that subjects even walking to a mechanical and uniform system. Facile rhetoric aside, reality is quite different and the exclusion of that commonplace and historically incorrect belief, imposes yet another important digression. In the preceding paragraph we provided a detailed explanation of the dispersal and breaking up of a marching column and its deleterious tactical consequences. The unceasing efforts at first to decrease and then suppress this deficiency finally led to the innovation of the rhythmic step, a method that may have been implemented as early as the Middle Ages, for brief distances and perhaps using the roll of drums. And it was by imposing two distinct commands, first to the right leg and then the left, in accordance with a precise temporal rhythm, that the cadenced or rhythmic march was developed.

The cadenced march was based on the concept that if every soldier moved the same leg simultaneously with that of the others, and at an identical angle, he would no longer have to wait for the completion of the same movement by the soldier in front. In this manner the entire unit would be transformed into a single compact and synchronous body, or, to return to our analogy, the column of cars would be transformed into a rail convoy! In this manner the static and dynamic obstructions of any military unit, large or small, would coincide and there would no longer be an accordion effect.

Some Egyptian models of military formations on the march, and numerous Roman bas reliefs of the Classical Era with a military subject, show groups of warriors aligned, all with the same leg raised, obviously intent in completing a step. The synchronism of the scene has led many scholars to believe that rhythmic marching step was used even at that time. In reality there are other friezes, even more ancient, depicting various slingsmen, archers, swimmers, all in the same position, without anyone supposing that

they were about to hurl stones and darts simultaneously, nor that they were swimming synchronously as in our very modern artistic gymnastics!

The explanation is quite simple. This was merely a conventional illustration technique, that, in addition to being an unquestionable simplification for the executor, was used to indicate a large number of men intent on the same task at the same time, but not necessarily synchronously!

In fact, the idea of having the soldiers of an entire unit march by moving their legs not only simultaneously but in perfect synchrony and in a geometrically equivalent manner, a mode technically defined as cadenced march, is rather recent and was introduced at the end of the eighteenth century. On this topic General Ulloa stated that:"*the invention of the rhythmic step, introduced in the XVIII century, is justly reputed by tacticians as having contributed the most to the advancement of the art of war. In fact, as the soldiers moved uniformly, they maintained order within lines, could advance more comfortably and cover more space in less time; wavering was avoided and an entire battalion moved as a single body. By maintaining the rhythm and step soldiers on a fast march can reach the enemy in an orderly manner and engage the formation in its entirety. This general effect and this union of forces ensures success in combat ...*"[77]

Concerning the meaning of formation, General Palmieri noted that this may be:"*a composite of lines and rows; that the line is a series of men situated shoulder to shoulder and the row a series of men front to back; as a result the soldier is in formation, if he maintains his line and row. As soon as he loses one or the other, he is out of formation, and the entire body becomes disordered ...*"[78] When the Romans marched they could not remain in formation in the strict sense because they were not familiar with the rhythmic step march, yet to come. Thus any formation of theirs was subject to the undulations and lengthening mentioned. In this case also, where the many illustrations left by innumerable artists, including some of the great masters of the Renaissance, depicted Roman formations marching like geometrically defined and regular blocks they do so, inevitably, supposing them not while marching but preparing to do so, that

Antichi modelli di fanteria egiziana in marcia.
Ancient models of Egyptian infantry marching.

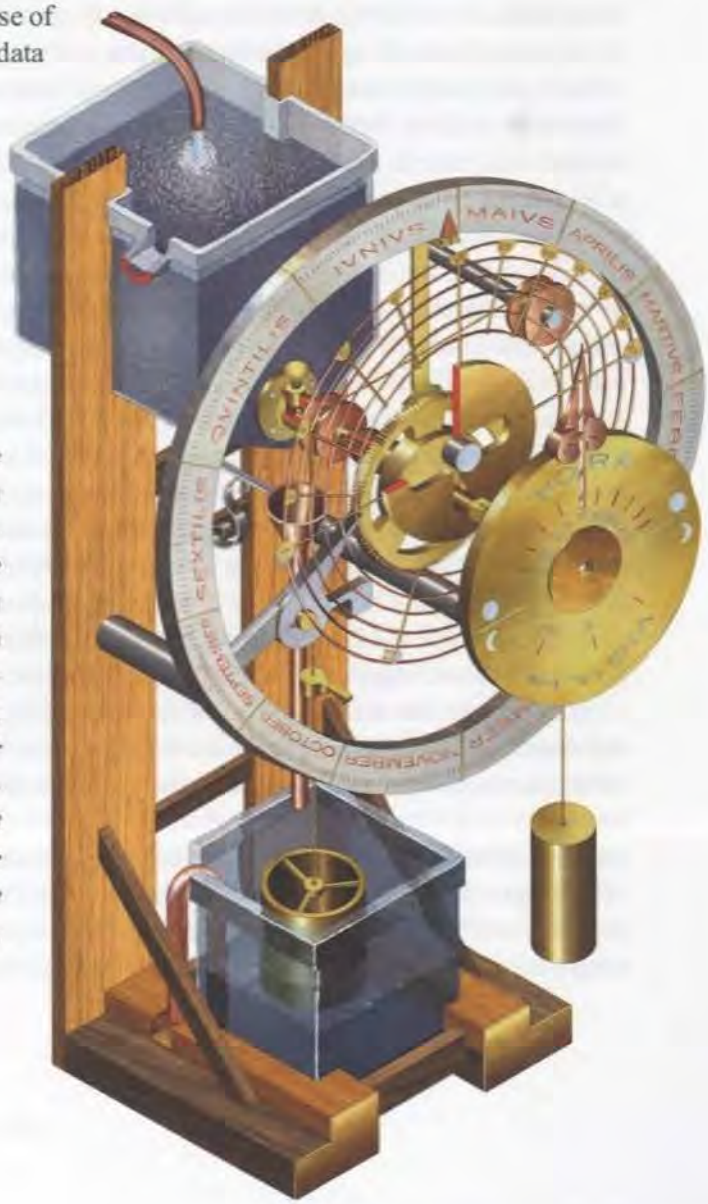
is, in formation line-up. Static, not dynamic, representations of armies grouped and fractioned into smaller units, with unquestionable historical prevision but alas with just as unquestionable geometric idealisation!

Reality was very different and less spectacular, and in envisaging the space occupied by a march, we are not far from the truth to suppose it to be at least three times longer, the formation being equal, than a formation with the same number of men, but standing still.

Daily Advancement of the Legions

Having clarified the methods of marching of a large Roman unit and its consequent highly variable length, we still need to evaluate its manner of travel and the distance it could cover in a day's march. Or at least the context of its excursion. Which obviously means verifying the speed of march under different conditions. Now, although there is no lack of sources in this regard, these sources tend to provide the spectacular rather than the usual, similar to sensational journalism, and this is something to be considered. Furthermore, since speed is a sort of physiological performance and as such not subject to significant changes in the course of millenniums, it would be logical to correlate ancient performances with modern ones, much less arbitrary and uncontrollable, if for no other reason than the correctness of measuring time, independent of the apparent course of the sun. Thus we can submit present some reliable data concerning the frequency of the step, the basic requirements of speed today as it was during the Roman era. The only difference consists in considering this value, after the introduction of the rhythmic step, as a specific number in the unit of time, while in the past it was only an average, since it was difficult to determine precisely the duration of an hour. On daily distances however the difference is not overwhelming, thus allowing the above interpolation.

Once again we turn to General Ulloa:"*there are five types of steps: the school step, which is 2 feet in length, and 76 are taken per minute [equal approximately to 3 km/h]; the ordinary step, of the same length as the school step, and 100 of these are taken per minute [equal to approximately 4 km/h], which is the most comfortable step, because it is man's natural step, though longer and faster; the charge step, faster than the ordinary one, and 130 are taken per minute [equal to approximately 5.1 km/h]; the gymnastic step, which is 2 feet 2 inches, and is taken at different speeds, and 175 can be taken per minute [equal to approximately 7 km/h]; finally there is the running step, which is the same as the gymnastic step, but has the greatest speed [approximately 8 km/h].*



Orologio ad acqua romano, ideato da Ctesibio.
Roman water clock, invented by Ctesibius.

The infantry moved at school step in the elementary exercises of the soldier and in the platoon and division school; at ordinary step in the battalion and line formations; at charge step and gymnastic step in the fast lines. But it would be useful for the soldier to practice this step in order to maintain it for a long time and use it in all the evolutions and movements on the field of battle"[79] Thus, even:"*with these data we could calculate exactly the time required for an infantryman to go a certain distance; noting that the nature of the different terrains and the frequent interruptions in movement modify the results of the calculation. But experience provides the following data.*

A good and well exercised infantry can advance 300 metres on the field of battle; marching in close order, in 4 minutes; running in 2'5"; marching in open order, in 3'40"; and running 2'2". On soft terrain in 4' with the ordinary step; running, in 2'5" with the first array, and with the second in 3'40" with the ordinary step, and in 2'40" with the running step.

When the terrain is uneven and inclined, the speed of movement cannot be accurately assessed as it depends on the different inclinations of the land that may accelerate or slow movement.

On firm and compact terrain the infantry can advance 2 miles in one hour, and 4 miles in 130', remaining united and orderly; in open order it requires 55' to advance 2 miles and 120' for 4 miles. On soft and uneven terrain, in the first case the time required is 60' and 130', and in the second 55' and 120'..."[80]

Obviously the speeds given by the general, even when referring to off track advancement, presuppose a suitable terrain, not only compact, but also free of vegetation and relatively regular and straight. Not incidentally it was in order to avoid such rough terrain that the Romans built their extraordinary road network. Where such roads did not exist it became difficult to train a soldier to march, as he was also:"*carrying his weapons, his clothes and even his bread for several days; thus he is to be exercised walking with this weight. Lack of such training would make the majority of soldiers marching useless. Some drop off along the way, others tire in such a way that, if they need to act, they have neither the strength nor the spirit. The Romans trained carrying a weight of (Roman) 60 pounds [approximately 18 kg] walking with the military step. Marius' soldiers, because of the heavy weight they had to carry, were called Marian mules. Training and exercise ensures that even with such burden they walked longer and tired less, than ours who are free...*"[81]

Which is yet another confirmation of the rhetoric that surrounded the legions rather than proven capability. To make the historical re-evocations even less likely the same general continued with his reasoning, stating:"*if speed is to be increased, or space, all is confusion within the formation. Sometimes a longer or quicker step is taken, but in very little space. This is not sufficient, or to explain better, is useless. If a troop must advance 10 or 20 miles, toward locations where they may encounter the enemy, and consequently maintain its formation and combat form, by marching using the step they have practised and that is the only one than can maintain the formation, it requires a month. But if it must march 10 or 20 miles in three or five hours, it is necessary to have trained in such and to have travelled that distance several times, in order to do so when required. The Romans trained three times a month armed, and in order, walking twenty miles with the military step, that is, for 5 summer hours, over good and difficult terrain, in order to be ready...*"[82]

Apart from the usual astonishing potential of the Romans, desumed as mentioned from the sources without any critical endorsement or logical reserve, it is plausible to estimate for a large unit travelling on flat or slightly inclined terrain and, especially, without any interruption, a maximum average speed of not more than 3 km/h in the best of cases. Considering, however, that even the slightest inclination could slow down the baggage wagons, those carrying the siege machines and the heavy equipment much more than the men and animals, the speed could not exceed a couple of km/h. The significantly superior values attributed by historians are to be considered as exceptional because attained under absolutely exceptional circumstances. For the most part, they refer to units without baggage wagons, moving along roads in excellent condition, irrelevant inclinations, without any fords to cross, with soldiers carrying relatively light weights and in the good

season. This explains why:"*concerning distances that the Roman units could travel, Flavius Renatus Vegetius... [reports] 5,000 steps in 5 hours at a normal pace, 24 miles (34 km approximately) in the same time but at a slightly quicker step, then by running, which distance could not be assessed. However, as we can note, these are very high values if we consider that the infantryman, armed and equipped, could travel an average of 7 km per hour ...*"[83]

If we were to apply this statement to the letter we would assume that a legionnaire army could cover a daily average distance of just under fifty kilometres, obviously an absurd amount. In reality, considering that the Roman hour in the summer lasted approximately 15 minutes longer than ours, the five hours of Flavius Vegetius become six and a quarter, which lowers the average speed to approximately 5.5 km/h, a value not far from the current one for ordinary marching. In truth, Vegetius stated, in his dry prose manner that:"*according to the military cadence we must count five thousand steps in five hours, while at a faster step and in the same time one travels twenty four miles (35 km). Accelerating further, we attain the race, for which one cannot determine the distance that can be covered in the hours indicated ...*"[84] In the terms cited the data appear to refer to a gymnastic exercise, especially as there is no mention of the weight of the equipment and armaments. Thus the famous 7 km/h, actually 5, should be considered as athletic results in optimal conditions, a bit like the speed reached in races or the maximum speed indicated on the tachymeter of our vehicles. Finally, taking for granted that the entire unit moved homogeneously, the famous 5 km/h would have been the speed of all its components, including mule wagons or baggage wagons. An extremely improbable theory since Roman wagons, even on a level road, were never able to travel at an average speed greater than 4 km/h. As confirmation, some simple observations: if, for example, the speed of the baggage wagons were the same as that of the infantry, why would they be called impedimenta? Their proverbial slowness was exasperating for the very reason that it prevented the speed achieved by legs! Much more realistic and probable the values provided by Clausewitz, who, apart from his theoretical competence, also had considerable experience in commanding large units. Considering that the Prussian mile, called Rhine, equalled km 7.5, he wrote:"*concerning the length of a march and the related time, we must make use of general experience. For our modern armies, it has long been proven that a march of three (Roman) miles [km 22.5] is normal for one day, that for very long columns this must be shortened perhaps to two miles [km 15], in order to enjoy the hours of rest necessary to all, especially the weary.*

For a division of 8,000 men, a march of such distance on flat terrain and with sufficiently good roads requires 8 10 hours: in the mountains, from 10 to 12. If several divisions are in column one behind the other, a couple of hours more are needed, considering the interval in the hours of departure of the rear divisions. It is evident that the day is sufficiently fulfilled by such a march, that the weariness of the soldier in walking 10 12 hours with the weight of the packing, cannot be compared with that of someone taking a three mile walk along good roads, for which five hours are sufficient for a single man .... A march of 5 miles [km 37.5] requires a stop of an hour or so; and a division of 5,000 men cannot accomplish it, even with good roads, in less than 16 hours. If the march is 6 miles [km 45] with several divisions in column, one must calculate at least 20 hours".[85]

The values given by the Prussian confirm the previous statements. Remembering that the Romans marched for a maximum of 6 hours, the distance they managed to cover in such contexts could not exceed 7-8 km and in more difficult circumstances, even less. Which cannot be attributed exclusively to the route or the wagons, but to the frequency of the courses of water in advancing off track. The slightest ditch only a few meters wide required hours of fatiguing work to cross. And even an average rainfall might make the terrain too soft causing the relatively narrow rimmed wheels to sink, requiring hours of effort to release them. Which not only directly influences the average distance travelled but also and indirectly, leads to the need for rest stops.

Notes

1 - L. QUILICI, *Roma primitiva e le origini della civiltà laziale*, Rome 1979, p.29.

2 - A. BERNARDI, M. A. LEVI, *Le origini di Roma*, in *La Storia*, Milan 2006, vol.III, p. 658.

3 - F. RUSSO, F. RUSSO, *Indagine sulle Forche Caudine, immutabilità dei principi dell'arte militare*, Rome 2006, pp.145 and foll.

4 - T. MOMMSEN, *Storia di Roma antica*, bk. II, *Dalle origini alla cacciata dei re di Roma*, reprint Bologna 1979, vol.II, p. 546.

5 - T. MOMMSEN, *Storia di Roma...*, cit., vol. II, p. 546.

6 - G. TAGLIAMONTE, *I Sanniti Caudini,Irpini, Pentri, Carnicini, Frentani*, Milan 1997, p. 13-21.

7 - Y. GARLAN, *Guerra e società nel mondo antico*, Bologna 1985, p. 156.

8 - XENOPHON, *Anabasi*, translation F.Ferrari, bk. III, 2.18.

9 - T. MOMMSEN, *Storia di Roma...*, cit., vol. II, pp. 413 and foll.

10 - T. MOMMSEN, *Storia di Roma...*, cit., vol. II, p. 547.

11 - A. BERNARDI, M. A. LEVI, *Le origini di Roma...*, cit., vol.III, p. 661.

12 - F. RUSSO, *Faicchio, fortificazioni sannite e romane*, Piedimonte Matese 1999, pp. 51-87; also F. RUSSO, *Trenta secoli di fortificazioni in Campania*, Piedimonte Matese 1999, pp. 89- 104.

13 - F. RUSSO, *Faicchio, fortificazioni...*, cit., pp. 108-116.

14 - J. WACHER, *Il mondo di Roma imperiale*, Bari 1989, p. 87.

15 - J. WACHER, *Il mondo di Roma...*, cit., p. 88.

16 - Y. GARLAN, *Guerra e società...*, cit., p. 142.

17 - POLYBIUS OF MEGALOPOLIS, *Storie*, ed by G. B. CARDONA, Naples 1968, bk VI, 19, p. 171. The phrase has been translated as: "*the number of (annual) campaigns they must undertake is ten for the cavalry and six for the infantry ...*". However, other translators are of the more believable opinion that it should be read as:"*a cavalry soldier must serve for ten years, and an infantryman for sixteen ...*"- from J. WACHER, *Il mondo di Roma...*, cit., p.89.

18 - The term '*navy*' understood as a service separate and distinct from the army, is misleading as at the time warships were used as a means of transportation and combat for the legions, exactly like the siege engines. However, given the importance of naval forces during the Imperial Era, the word appears if not

justified, at least justifiable. Cf. F. RUSSO, F. RUSSO, *79 d.C. Rotta su Pompei. Indagine sulla scomparsa di un Ammiraglio*, Naples 2006, pp. 126-212.

19 - POLIBIO DI MEGALOPOLI, *Storie*...,cit., bkVI, 20-26, pp.170-176.

20 - C. BLAIR, *Enciclopedia delle armi*, Verona 1979, p. 359, under pilum.

21 - Y. GARLAN, *Guerra e società*..., cit., p. 152.

22 - F. RUSSO, *Ingegno e paura*, Roma 2006, pp.97-146.

23 - C. G. CESARE, *De bello gallico*, bk V, 48.

24 - W. REID, *La scienza delle armi*, Milan 1979, p. 16.

25 - A. ANGELINI, *L'arte militare di Flavio Renato Vegezio*, Roma 1984, bk II, 2, pp. 44-45.

26 - J. WACHER, *Il mondo di Roma*..., cit., pp. 113-120.

27 - The promontori of Calos, now corresponds to Cap Blanc near Bizerte, north of Tunis.

28 - The text of the treatise by Polybius, is taken from D. CARRO, *Classica. Storia della marina di Roma.Testimonianze dall'antichità*, sec. ed., supplement to the Maritime Review n° 12, Rome 2000, vol. I, p. 18.

29 - D. CARRO, *Classica*..., cit., vol. I, p. 22.

30 - Y. GARLAN, *Guerra e società*..., cit., p. 201.

31 - POLIBIO DI MEGALOPOLI, *Storie*..., cit., bk I, 20, vol. I, p.123.

32 - DIODORO SICULO, XIV, 41, 3-42, 2.

33 - POLIBIO DI MEGALOPOLI, *Storie*..., cit., bk I, 20, volo. I, p.123.

34 - POLIBIO DI MEGALOPOLI, *Storie*..., cit., bk I, 20, vol. I, p.124.

35 - F. RUSSO, F. RUSSO, *79 d.C. Rotta su Pompei*..., cit., pp. 134-142.

36 - V. FOLEY, W. SOEDEL, *Antiche navi da guerra a remi*, in *Le Scienze* n°....., pp. 95- 106. See also E. CECCHINI, *Tecnologia ed arte militare*, Rome 1997, pp. 48- 50.

37 - The quotation from Polybius is taken from D. CARRO, *Classica*..., cit., vol. I, p. 48.

38 - The quotation from Polybius is taken from D. CARRO, *Classica*..., cit., vol. I, p. 48.

39 - E. GABBA, *Le origini dell'esercito professionale in Roma: i proletari e la riforma di Mario*, in *«Athenaeum»*, XXVII, 1949, p. 176-178.

40 - E. GABBA, *Le origini dell'esercito*..., cit., pp. 201-202.

41 - J. WACHER, *Il mondo di Roma*..., cit., p. 97.

42 - A. BERNARDI, M. A. LEVI, *Le origini di Roma*..., cit., vol. III, p. 665.

43 - J. WACHER, *Il mondo di Roma*..., cit., p. 97.

44 - M. T. CICERONE, *Tusc.* II, XVI, 37.

45 - M. FEUGERE, *Les armes des romains, de la Republique à l'Antiquité tardive*, Paris ed. 2002, pp.72-73.

46 - F. RUSSO, *Tormenta. Venti secoli di artiglieria meccanica*, Rome 2002, pp. 176-177.

47 - F. RUSSO, *L'artiglieria delle legioni romane*, Rome 2004, 121-169.

48 -The modioli of the relic found in Ampurias, Caminreal and Cremona have a insertion diameter between Ø mm 76 and Ø mm 80. The modioli of another catapult found in Morocco, nears the ruins of the Roman city of Sales are almost identical. See C. BOUBE-PICCOT, *Elements de catapultes en bronze decouverts en Mauretanie Tingitane, in Bulletine d'archeologie marocaine*, Tome XVII 1987-1988, p. 213. The one found near Lyon is also of the a similar diameter, cf. D. BAATZ, M. FEUGERE, *Eléments d'une catapulte romaine trouvée à Lyon, in Gallia, fouilles et monuments archeologiques en France métropolitaine*, Paris 1981, pp. 201 and foll.

49 - T. CELOTTI, *Storia di Spagna*, sec. ed. Milan 1940, pp. 50- 51.

50 - For further study see E. SCHRAMM, *Die antiken Geschutze der Saalburg. Bemerkungen zu ihrer Rekonstruktion*, Berlin 1918.

51 - See J. D. VICENTE, M. P. PUNTER, B. EZQUERRA, *La catapulta tardo-republicana y otro equipamiento militar de 'La Caridad' (Caminreal, Teruel)*, in *Journal of roman military equipment studies*, vol.8, 1997, pp. 167-199.

52 - See D. BAATZ, *Ein katapult der Legio IV Macedonia aus Cremona*, in *Romische Mitteilungen*, 87, 1980.

53 - The mention is in the V book of the Mechanical Syntax by Philo, translated into French and published by Y. GARLAN, *Recherches de poliorcétique grecque*, Paris 1974, pp.279- 404.

54 - Y. LE BOHEC, *L'esercito romano*, Urbino 2001, p. 209-218.

55 - E. N. LUTTWAK, *La grande strategia dell'impero romano*, dal I al III secolo d.C., Milan 1981, p.82.

56 - A. ANGELINI, *L'arte miltare...*, cit., p. 103.

57 - E. N. LUTTWAK, *La grande strategia dell'impero...*, cit., pp.82-83.

58 - M. FEUGERE, *Les armes des Romains de la République à l'Antiquité tardive*, Paris 2002, p.51, translation by A.

59 - Y. LE BOHEC, *L'esercito...*, cit., p.210.

60 - Y. LE BOHEC, *L'esercito...*, cit., p.68.

61 - A. ANGELINI, *L'arte militare...*, cit., p.32

62 - A. ANGELINI, L'arte militare..., cit., p. 102

63 - Concerning the features and use of the groma cf. F. RUSSO, F. RUSSO, *Pompei: la tecnologia dimenticata*, Naples 2007, p. 118.

64 - A. ANGELINI, *L'arte militare...*, cit., p. 104.

65 - J. WACHER, *Il mondo di...*, cit., p.92.

66 - A. M. LIBERATI, F. SILVERIO, *Legio. Storia dei soldati di Roma*, Roma 1992, p.105

67 - Y. LE BOHEC, *L'esercito...*, cit., p. 214.

68 - P. MARAVIGNA, *Storia dell'arte militare moderna*, Torino 1926, vol. I, p.243, note n° 3. In this case also the writings of Flavius Josephus are of great interest. The historian reports that when going with his army from Tolemaide to invade Galilee, Vespasian instructed: that the auxiliaries with light armour and

the archers should be in front to repel enemy attacks and explore the woods to prevent ambushes; they were accompanied by a contingent of Roman soldiers with heavy arms, some on foot and some on horseback. Behind them came ten men for every century, carrying their baggage and the tools to measure for the camp, then came the sappers to straighten the tortuous paths, level the ground and eliminate vegetation that obstructed passage to facilitate the march of the army …"

69 - A. LIBERATI, F. SILVERIO, *Legio...*, cit., p. 111

70 -The first railway in Italy, the Naples-Portici, was built to provide transportation to the shipyards of Castellammare di Stabia, and from there to Capua. In both cases they were strictly military structures.

71 - E. N. LUTTWAK, *La grande strategia dell'impero romano...*, cit., p. 277, note n° 6.

72 -The quotation is from *Cenni elementari di Arte Militare*, Rome 1874, p.71

73 - *Cenni...*, cit., p. 74.

74 - G. B. CARDONA (edited by), *Polibio...*, cit , vol. II, pp. 187-188.

75 - A. ANGELINI, *L'arte militare...*, cit., p. 93.

76 - G. ULLOA, *Dell'arte della guerra*, Torino 1851, vol. II, p. 175.

77 - G. ULLOA, *Dell'arte...*, cit., vol. I, p. 50.

78 - G. PALMIERI, *Riflessioni critiche sull'arte della guerra*, edited by M. Proto, reprint Mandria 1995, p. 545.

79 - G. ULLOA, *Dell'arte...*, cit., vol. I, p. 51.

80 - G. ULLOA, *Dell'arte...*, cit., p. 52.

81 - G. PALMIERI, *Riflessioni critiche...*, cit., p. 543.

82 - G. PALMIERI, *Riflessioni critiche...*, cit., p. 546.

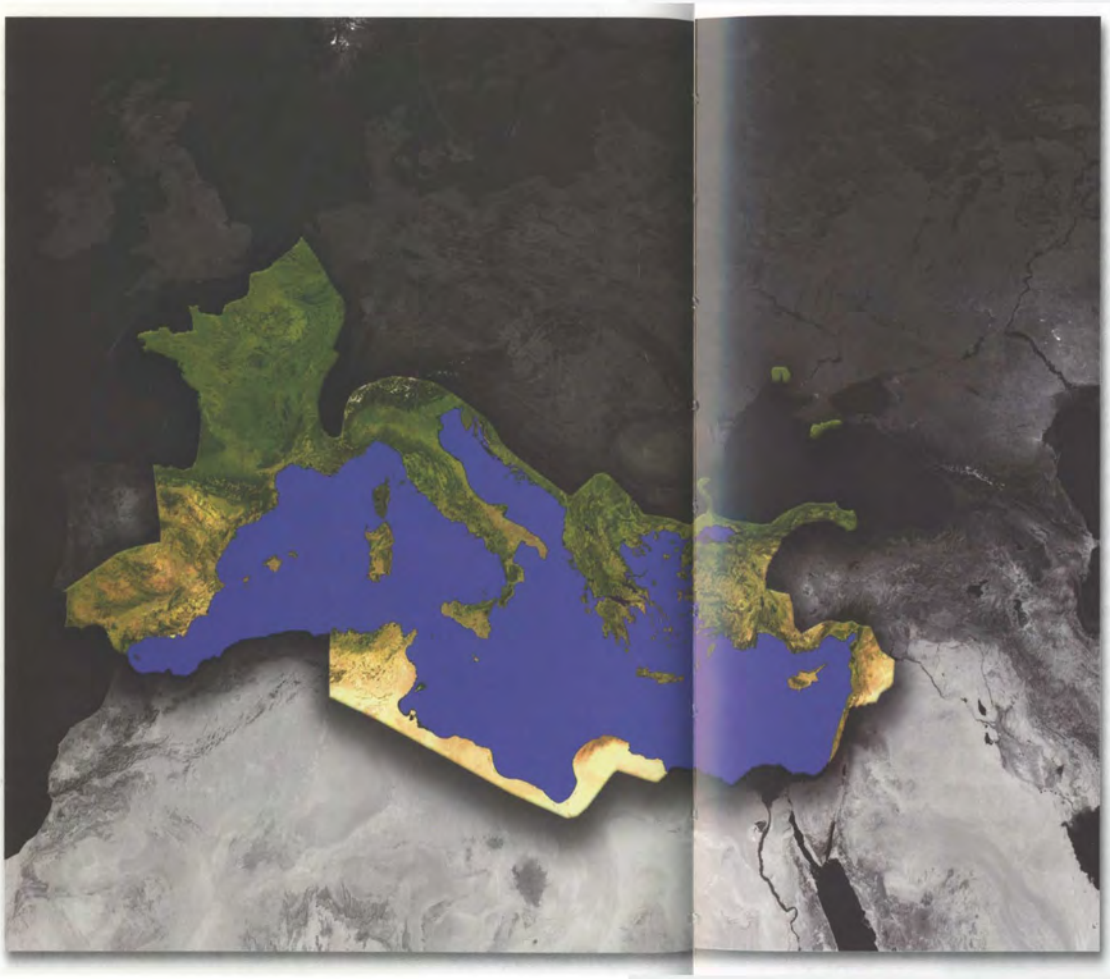
83 - A. LIBERATI, F. SILVERIO, *Legio...*, cit., p. 111.

84 - A. ANGELINI, *L'arte militare...*, cit., p. 16.

85 - K. VON CLAUSEWITZ, *Della guerra*, Trento 1982, p. 389.

Part Three

The Legions of the High Empi



L'area sotto il controllo di Roma nel 40 a.C.
The area controlled by Rome in 40 B.C.

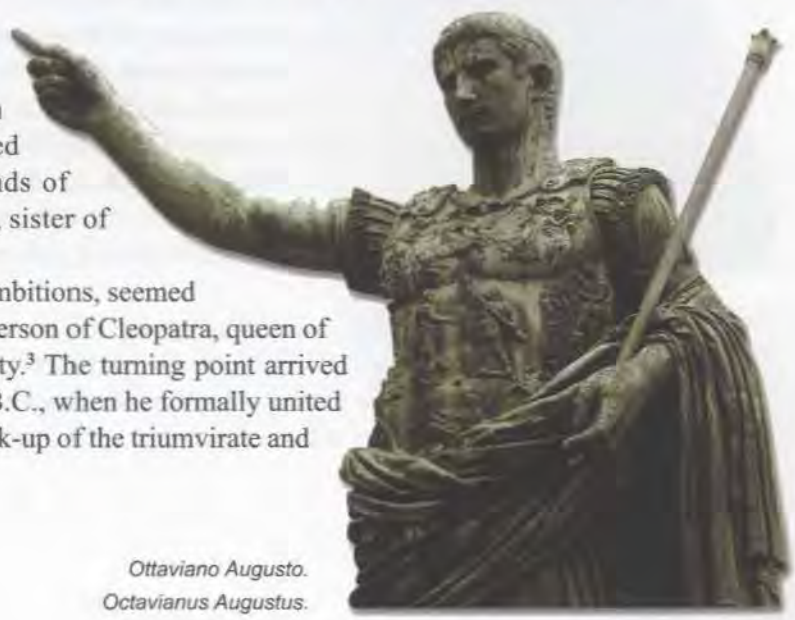
From the Republic to the Empire

In 44 B.C. in spite of his many merits and abilities, the dictator Julius Caesar was treacherously killed, arousing general consternation in Rome. Mark Antony, his cavalry commander and intimate friend, good demagogue that he was, while defending the memory of his friend also incited the people against the conspirators to the point that two of the guiltiest, Brutus and Cassius, were forced to flee the city and Italy. At this point, a young grand nephew of Caesar whom he had recently adopted appeared on the scene: Octavianus.

He was barely 19 and though he had no special skills, or obvious military inclination, like his uncle he too aspired to supreme power, though in his case it was concealed by a sensitive personality. He was also sufficiently clever to realize that at that time he had neither the power to attain such supremacy nor the right age to be convincing and credible. There was also the fact that the Senate, always diffident toward autocrats, viewed Mark Antony, now the sole Consul and idol of the people, as a sort of substitute dictator. It therefore tended to lean toward Octavianus and praise his choices, justly considering him Antony's most direct and feared opponent. The tactic was simple and typical of Roman logic: encourage confrontations between enemies to facilitate subjugation of the weary winner![1]

Octavianus appeared, at least initially, to fully agree with the Senate, subjecting Antony to a cruel defeat in 43, after forcing him to cross the Alps. But subsequent events took an unexpected turn: with a casual and facile policy the youth effected a reconciliation with Antony and, along with Marcus Lepidus, Caesar's successor as *Pontifex Maximus*, formed a new triumvirate, the second in history. Mutual interests simplified his dismissal of Brutus and Cassius: their day of reckoning occurred in Philippi in the year 42, where their disastrous defeat was followed by suicide. For Octavianus and Antony this was the moment to effect a division of power that, following astute negotiations, led to the de facto ratification of the division of the Roman state in the year 40 B.C.. Two new entities emerged and were united through the mutual bonds of matrimony when Antony married Octavia, sister of Octavianus.[2]

The East, instead of placating Antony's ambitions, seemed to intensify it, aided to some extent by the person of Cleopatra, queen of Egypt and last heir of the Ptolemaic dynasty.[3] The turning point arrived with Antony's divorce from Octavia in 32 B.C., when he formally united with Cleopatra. The divorce caused the break-up of the triumvirate and



Ottaviano Augusto.
Octavianus Augustus.

severed the already slim bonds uniting the two parts of the Roman world, requiring only the slimmest of pretexts to become a full-fledged conflict. Perhaps the reckless queen played a role in provoking this result, or it may have been caued by the diffidence of a Senate that considered the growth of another power not subject to Rome as too dangerous, or it may have been Octavianus himself to believe the time had arrived to effect a break without delay.

Officially it was only the ill-considered ambitions of Antony, instigated by Cleopatra, that were the principal causes of an increasingly impending and inevitable war between Rome and Egypt. Believing, for understandable reasons, that naval confrontation would play a decisive role in the conflict, both armies feverishly increased naval construction in every shipyard in the Mediterranean. Enrolments of new legions [4] also kept pace with the constructions. According to sources, within a brief time Antony succeeded in assembling a fleet of eight hundred ships in Ephesus, including merchant and auxiliary ships. Cleopatra provided him with an additional two hundred, as well as a conspicuous amount of equipment, money and provisions, sufficient to sustain the entire army for the presumed duration of the war. Upon completion of all preparations, the couple, at the head of the imposing formation, undertook a cruise between the North African coast and Greece, stopping in Athens. The purpose of the voyage was obvious as they hoped that such an ostentatious display of power would discourage Octavianus from attempting any military operation against Egypt.[5]

In truth, when Octavianus received the frequent and increasingly accurate information on the activities of the couple, he fully realised that he was not prepared for an imminent confrontation and attempted, within the limits of his certainly not irrelevant powers, to further increase his army. The opposing forces in the East numbered 100,000 infantrymen and 20,000 horsemen [6], while in Italy there were 80,000 infantrymen and a more or less similar number of horsemen. As for the fleet, Antony had no less than five hundred battle ships of extraordinary lavishness and munificence [7], of which many had eight or ten men per rowing bench. But we must suppose that the distinctive feature of these great ships was a manifestation of wealth rather than suitability to combat, in accordance with the ostentation of wealth so typically oriental. They were also very heavy and slow ships, difficult to manoeuvre and clumsy in spite of the number of men at the oars, the majority of whom were slaves. Octavianus, on the other hand, could deploy barely two hundred fifty battle ships, essential in form but slim and manoeuvrable, agile and light, perfectly suited to the fast manoeuvres of a battle at sea. Their commander, Marcus Vipsanius Agrippa, had also added a large number of fast liburnian vessels to the formation - these were pirate attack units that he had captured from Liburnian pirates during the Dalmatian war.[8]

Nella pagina a fianco: Livia, moglie di Augusto.
In questa pagina: sopra, Ottavia, sorella di Augusto; sotto, Cleopatra.

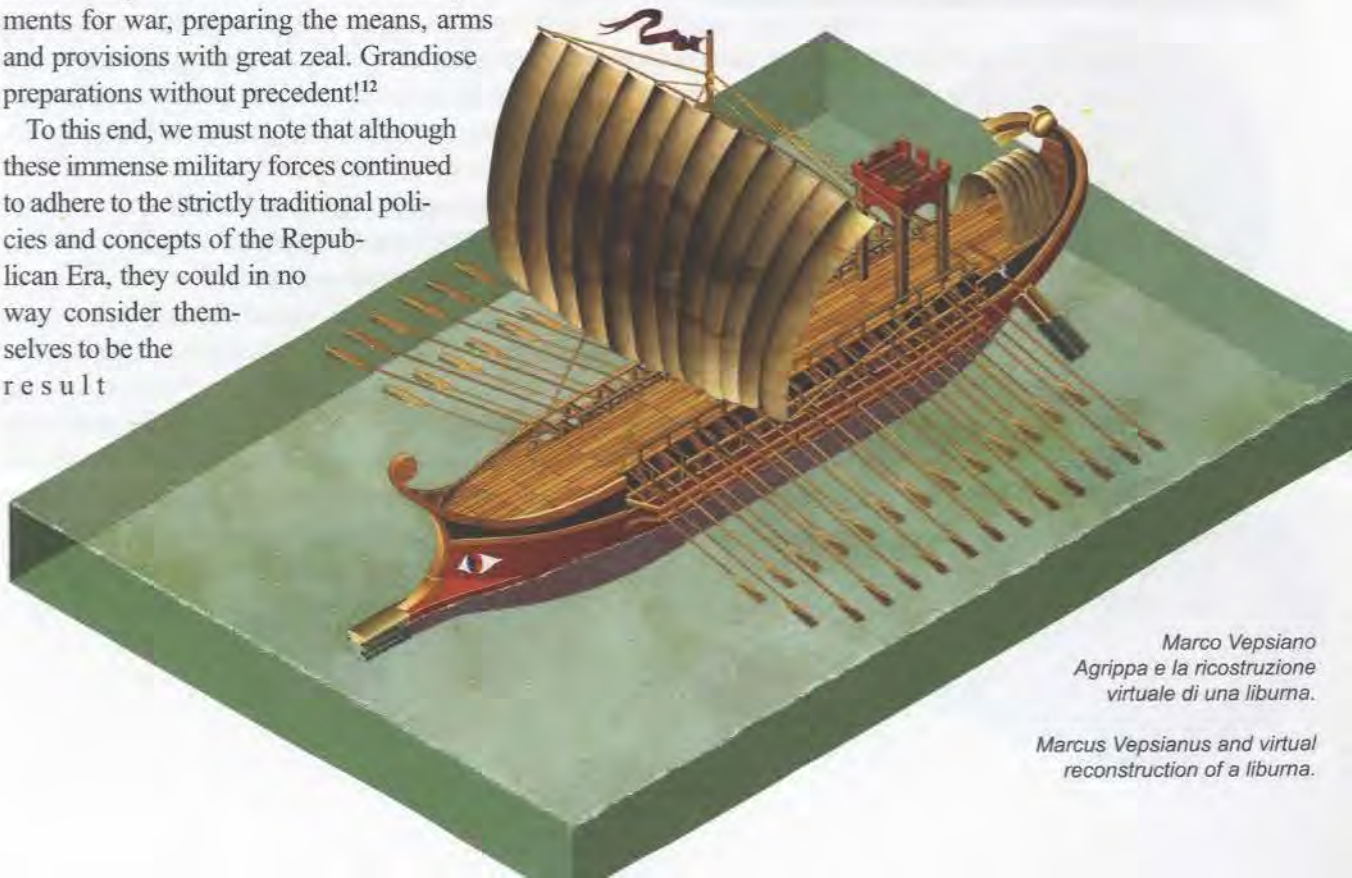
Side: Livia, wife of Augustus.
On this page: above, Octavia, sister of Augustus; below, Cleopatra.

The Eve of the Battle

Even with only these brief descriptions, the different criteria underlying the two formations ready to do battle are obvious. On the one hand, the pompous and vacuous lavishness of the eastern fleet, intended more to instil a sort of reverential fear in the enemy, as premise to his submission; on the other, the rude aggressiveness of the western fleet, all impetuousness and power, determined to defeat the enemy by physically annihilating him, leaving him no alternative. An antithesis that could compensate for the great numerical difference between the two fleets, especially if the commander of the smaller fleet was an enterprising admiral, as was Marcus Agrippa.[9] Doubts on the actual capabilities of that mass of gigantic ships soon began to emerge in the east, proven by the increasing defections that disintegrated Antony's fleet as the great confrontation approached. Flights and desertions that were obviously greeted with great enthusiasm by Octavianus, as was all the information he received regarding Antony's probable intentions. Primary among them, his hegemonic goals, to be sustained by a new dynasty generated by him and Cleopatra: when these ambitions were made known to the Romans they aroused indignation and led to the immediate consequence of divesting him of any residual office he still held. At that point, having now become the enemy, the rituals of war were initiated.[10]

From a strictly legal aspect, and according to the rigid norms of the era Octavianus was not yet the publicly recognised commander in chief. But the universal respect he had earned throughout Italy overcame this serious reservation, promoting him almost by public acclaim. Later he will write in his memoirs:"*All of Italy swore its fealty to me and wanted me as its leader [ducem] in the war I won in Actium; the provinces of Gallia, Spain, Africa, Sicily, Sardinia also swore fealty to me.*"[11] But although there was no longer any political opposition, this did not mean that Octavius was technically ready militarily for a confrontation. On the contrary, the quantitative gap in armaments, as described heretofore, had further deteriorated, forcing him to increase the already colossal program for rearmament. Perhaps it was in view of this enormous effort that he had to earn the trust of the Senate, as this was the only way to ensure the involvement of the entire western part of the Roman Empire. With this delicate phase accomplished, his commanders began to enrol troops, collect money and make all other arrangements for war, preparing the means, arms and provisions with great zeal. Grandiose preparations without precedent![12]

To this end, we must note that although these immense military forces continued to adhere to the strictly traditional policies and concepts of the Republican Era, they could in no way consider themselves to be the result



Marco Vepsiano
Agrippa e la ricostruzione virtuale di una liburna.

Marcus Vepsianus and virtual reconstruction of a liburna.

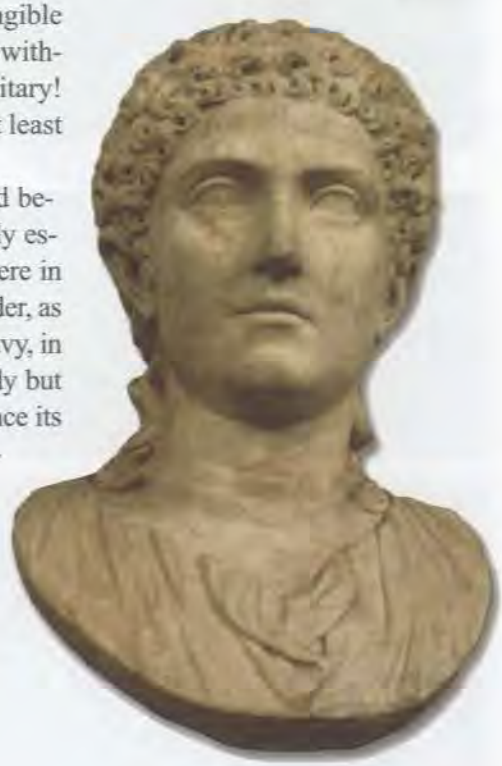
and manifestation of the will of the people as was true of that period. Several historians have justly noted that when Octavius concluded the tragic chapter of civil wars in Actium in 31, the power and authority of the State became embodied in a single man, leader of all the armed forces and thus *imperator* par excellence, as this was the correct title awarded to generals victorious in the field, since the III century B.C. But from that moment on, it became the habitual and customary praenomen of the prince and his successors, almost as if to continuously evoke the origin of their regime, established by his personal army.[13] The formation of that anomalous military structure was the final consequence of the reforms of Gaius Marius, binding the legions first and foremost to their commander by a direct and personal loyalty, transforming them into de facto private armies of highly specialized professionals wholly insensitive to central political power.

The reforms of Gaius Marius, with:"*the introduction of voluntary service had set the foundation for the advent of personal armies ready to march even against each other, as in effect happened in civil wars ... with voluntary service there was no longer enrolment for a single campaign but for several years, generally sixteen, and even when they had retired, the legionnaires could be recalled by their commanders. Thus public militia ended. A military class began to evolve within the body of citizens...a class that was increasingly detached from the State and loyal to its own leaders, who now personified the State according to personal interest and that of their followers*"[14] The true novelty of the victory of Actium was not the creation of personal professional armies, as manifested by the aforementioned battle, but their unification under the same leader: one army, under one *imperator*, to whom was sworn absolute loyalty! A manifest and biunivocal correspondence between *imperator* and state, between civil power and military power, leaving to the Senate the role of mere counselling body lacking any tangible decision making authority, as it was inconceivable to impose anything without adequate military support and even less so, anything against the military! An assembly of reverend men, and even ostentatiously revered men, at least by Octavius Augustus, rendered impotent and ineffective.[15]

This new political trend was made even more perceptible by the bond between the emperor and some of the military bodies, most of which newly established such as the praetorian guard and the navy, almost as if they were in some manner his *longa manus*, his armed wing, ready to carry out any order, as repugnant or illegal as it might be. A typical example was the wartime navy, in no way similar to our current Navy since it was not an autonomous body but ships used by the army for confrontations at sea or for transportation. Since its establishment, in the second half of the I century, it displayed such an attachment to the emperor in power as to venerate him even in life. Not incidentally, Nero assigned the freedman in command of the navy at the time with the execution of the plan to suppress his mother, Agrippina, who was saved by a miracle but who nevertheless did not survive![16]

Nella pagina a fianco: Stele funebre con milite di marina.
In questa pagina: sopra, Nerone; sotto, Agrippina.

Side: Funerary stele with marine infantryman.
On this page: above, Nero; below, Agrippina.



The Battle

The first to give any special attention to ships was Marcus Agrippa, justly causing many scholars to consider him as the founder of the Roman navy. But comparisons aside, debatable in any case, his attentions to the fleet were dictated both by his perception that the day of reckoning with Mark Antony would take place at sea and by recognition of the fact that a state bordering the Mediterranean could not continue to assemble ships only when war was approaching only to leave them to rot when it was over. For the time being, the entire army, ready and equipped to perfection, was concentrated in Taranto and Brindisi where the ships had already been moored and divided into two fleets. Marcus Agrippa himself was to have left with the Taranto fleet for the Ionian [17], fearing an enemy attack from the not too distant Greece. But the year 32 B.C. passed without any contact between the opposing formations. In the beginning of autumn, Antony and Cleopatra's fleet anchored inside the narrow gulf of Arta, at whose mouth arose Actium, and prepared to pass the winter. Antony, on the other hand, went to Patras, where he supervised the final preparations and deployed his legionnaires in various locations, a sign that he feared a probable enemy attack. The winter thus passed with the two contenders in a mutually suspicious vigilance, periodically disrupted by some modest skirmish, but without any further belligerent activity. Octavius did make one attempt to attack the ships of Mark Antony with a group from Brindisi, but the arrival of a storm at sea prevented the undertaking, without any damages.

The following spring of 31 B.C., hostilities at sea were begun by Agrippa, who set up a rigid naval blockade in the Aegean, and by Octavius who led his fleet directly to Actium, not far from the anchorage of Antony's fleet. Paradoxically, the situation between the two formations was stalled: the proposal to reach an agreement was not accepted out of diffidence and that of combating was not accepted out of fear! Antony then arrived but still did not attack, limiting himself simply to a few skirmish es and shows of force. In the meantime Agrippa conquered Leucas and then Patras with all the ships stationed there and convinced the inhabitants of Corinth to switch to his side. On land also Antony's situation was worsening, with numerous small but nevertheless emblematic defeats.[18]

And so the Spring passed. Toward the end of August, the first confrontation of a certain entity took place, although by that time Agrippa had already taken 130 of Antony's ships and sunk many more. His naval blockade also began to give some results: provisions in the enemy camp began to diminish, encouraging desertions that would increase drastically, forcing Antony to convene a council of war. The resulting recommendation, though not made pub-

lic, was that he should leave and seek refuge in Egypt while he was still capable of doing so. Ships that were not necessary were burnt and the remainder loaded with precious objects, all the while simulating preparations for the final battle.

On September 2, the long awaited and long feared battle finally took place: manoeuvring with extraordinary ability, Agrippa was prevailing over the enemy fleet when the flight of Cleopatra's ships, followed immediately by those of Antony, surprised the entire formation. The units however continued to fight valorously, since they were after all of Roman extraction, though without any hope of success. The sun set and upon its rising again, Octavius' victory was clear. Shapeless wrecks filled the surface of the sea: clinging to the larger pieces were the rare survivors of so many valorous crews; hundreds of ships reduced to smoking pontoons floated inert, galley slaves gripping their sides, awaiting their fate. Octavius granted life and pardon to all, and all immediately surrendered their weapons. The land detachments also, now abandoned, passed en masse to the conqueror.[19]

The New Roman Army

The military force now under the young Octavius had no historical precedent, certainly not a Roman one. A cautious estimate would place it at approximately 60-70 legions, certainly not complete ones given the significant losses incurred, but still an establishment of over 250,000 men! A number decidedly excessive and, in the long run, superfluous even for Rome, without considering the heavy financial burden for its maintenance. Nor was it practicable, given the foreseeable consequences, to dismiss all those legionnaires, many of such extensive experience and merit they could not afford to be lost. A selection had to be made between those who had been temporarily attached to increase the num-

In alto: due affreschi con navi da guerra,da Pompei. A fianco: dislocazione delle legioni in età augustea.

Above: two frescoes depicting warships, from Pompeii. To the side: posting of legions in the Augustan Era.

ber of troops and veterans who had been deceived by Antony's policies but who were now undeniably and fully loyal to the new *imperator*, whose right and legitimacy to govern they did not question. The wisdom of Octavius found the solution in a radical reform of the entire army. Even from a territorial perspective this was something that had been required for some time as the frontiers of Rome were very distant from the city and their numerous populations desirous of order and prosperity.

The military instrument that seemed to be necessary at that point was an army composed of professionally qualified men, skilled in combat and, more important, capable of managing peace, of educating by example and civilising a population composed of an immense variety of ethnic groups that had to evolve into a single and cohesive reality. An army of warriors and technicians, capable of opening new roads, of bringing water from hundreds of kilometres distant, of building entire cities in a rational manner, administering the law, ensuring the safety of frontier territories, of the seas and the coastlines, for although there were no longer any enemies in the traditional meaning of the word, this did not mean there were no longer any threats to public safety. An army of well paid experts, relatively few in number, would be the best guarantee in this respect, the more so as they could be selected from a multitude of aspirants. Thus:"*the victorious Augustus* [20]*, rapidly reduced the army to twenty-five or twenty-six legions (increased to twenty-eight in 25 B.C.) with the intent of creating a permanent force of more manageable size. This new legionnaire force consisted of little more than 150,000 men, a number that was apparently small compared to the vastness of the empire to be defended, but one based on calculated assessments of military and political opportunity.*"[21]

The reform accomplished by Augustus is proof of his great perception of military needs even though he had had no training in this field. He displayed a political sensitivity that allowed him to determine what was truly necessary for the defence of Rome and what instead would be not only futile but also financially detrimental. After all, if:"*contemporary historians have often agreed on Augustus' lack of military characteristics and the fact that he very rarely ventured personally into the battle field ... Sextus Aurelius Victor (22), echoing an ancient tradition, paints a more complementary picture of this prince. We fully agree that there is no need to rehabilitate Augustus as a general.*

First of all, it is to his reign that we attribute the organisation of the army, such as existed for the entire period of the High Empire. Certainly he did not start with nothing: the Republic already had forces that were sufficiently structured to conquer a good part of the Mediterranean world. But the distinction between the garrison of Rome and the garrison of the provinces, the difference between auxiliary units and legions, the command of each, models of recruitment and the strategy implemented along the frontiers, all may be attributed to the very beginning of the new regime..."[23] Of course, it is easy to say that such modifications were the work of his technicians, his military advisors and certainly not fruit of his own intelligence, yet the merit is still his for it was he who made use of competent counsellors and followed their recommendations.! Furthermore, we cannot underestimate his role in the rationalization of the frontiers and the definitive subjugation of the recently Romanised provinces. Scholars observe that:"*there is no reason to believe that the re-organization of the army following the battle of Actium was dictated by financial restrictions or by the lack of men. It appears more probable that the number of legions was reduced to twenty-eight, from the original approximately sixty (though some were incomplete), deployed on both sides during the civil war, in accordance with a rational deployment scheme, which costs were determined by the contingents required, and not the contrary.*"[24]

That the reform was dictated principally by strategic reasons rather than financial limitations, or that the annual maintenance of an even larger army was fully sustainable by the Roman economy of the era, is confirmed implicitly by the many legionnaires paid by Augustus with his own money, upon their retirement. Since at the time there existed a very discretionary practice of giving veterans a piece of land when they retired from the army, and since this practice was unpopular with the Senate because of the high

costs involved, its observance often fell to the individual generals. Octavius used this practice to demobilise the supernumeraries of the post Actium army. Thus:"*in the years immediately following Actium he demobilised more than one hundred thousand veterans, settling them in old and new colonies throughout Italy and the provinces. This he funded mostly from his personal fortune, confiscated from the Egyptian treasury in 30 B.C.; he later declared that he had spent 600 million sesterces in Italy and 260 in the provinces to purchase land for the settlers (Res gestae, 16)*"[25] Difficult to believe that something that could be accomplished by a single individual, wealthy as that person might be, could not be accomplished by Imperial Rome!

It is completely logical to assume that it would be simpler to sustain the cost of an army than to recruit new conscripts! But Octavius' foresight is incontestable even in this, for in addition to ensuring the loyalty of the veterans, this procedure also indirectly facilitated recruitment, since any aspiring soldier would know the amount and nature of his retirement compensation. And that this was not simply an occasional expedient was soon proven by its transformation into an institutional practice. In fact, although in 13 A.D. they decided to replace land grants with 3,000 dinars, by 5 A.D., they returned to the old procedure. Both the emperors and the veterans were responsible for the restoration of these grants: the former because colonies were loyal by tradition; the latter, because in this manner they preserved their capital from being devalued by inflation. It should also be noted that if the currency allowance was well accepted by veterans who came from the cities as they were not greatly interested in owning a piece of land and even by some of the farmers who may already have had a small estate, such was not the case for many of the emperors, for they considered the settling of new colonies as a defence of Roman civilisation, forward defence posts at zero cost, that they could always rely upon. This encouraged the cyclical reproposal of land grants, especially wherever the geopolitical situation appeared to be less stable. In fact, some of the veterans complained of land grants in remote regions of the empire, of very little commercial value and of meagre income. Augustus bore this heavy burden for an extended period and only in 6 A.D. did the State assume responsibility, instituting a special military treasury, the *aerarium militare*, endowing it with an initial contribution of 170 million sesterces. In addition, in order to ensure its correct future operation it levied a 5% tax on inheritance and another 1% on sales by auction. Such care in the management of this initial military social security system indicates a different perception of the institution, simultaneously an indispensable support and a treacherous instrument of power, two extreme opposites within which all the emperors had to manoeuvre.

The reasons for the containment, apart from the rationalization of forces along the frontiers, were financial and political. The army had to be sufficiently large to defend the Empire, but not so large as be a danger to itself or to the emperor; too many men in a single province could give rise to the threat of rebellion, a temptation for any usurper ready to do battle; certainly an army of professional volunteers ensured loyalty, but in the absence of booty to integrate their meagre stipend, the propension to mutiny increased. Also:"*the anger of troops who might be well aware of the fact that they were indispensable was very clear to Augustus (even*

Aerial views of Roman land division in the Po Valley.

among the most loyal units, after Philippi, there had been violent vindications with demands for discharge and rewards for conclusion of service). He preferred to promote a policy of peace within and one of good neighbour with the inhabitants on the other side of the frontiers and so... he stationed the legions... all along the borders of those territories that were the most militarily exposed, keeping only nine cohorts of selected legionnaires in Rome as a personal guard and to support the central power - these were the Praetorians (officers in charge of the praetorium, the military command of the castrum), the only operational and rapid deployment corps"[26]

Size and Locations of the Armed Force

To determine the size and the division of the entire Roman military apparatus, if not immediately following Actium, at least after the stabilisation of Augustus' reforms in the first decades of the Empire and that basically coincide with those of our own era, we have a detailed account by Tacitus. According to this historian, around 23 A.D., when Tiberius was still in power, he considered all the legions and the provinces that they were to defend, reaching this conclusion:"*Two fleets, one at Miseno, the other near Ravenna, guarded Italy on both seas; contiguous to the coast of Gaul were the ships of war captured in the victory of Actium, and sent by Augustus powerfully manned to the Julian Forum.*[27] *But the largest force of the army was on the Rhine: eight legions as a defence against the Germans and the Gauls; Spain, lately subjugated, was held by three legions. King Juba had accepted the dominion of Mauri as a gift from the Roman people; while the other regions of Africa and Egypt were garrisoned by two legions, four legions controlled the entire vast territory from the frontiers of Syria up to the Euphrates River, bordering with the Iberian, Albanian and other kingdoms, which our force protects from any foreign power... two legions in Pannonia and two in Moesia held the banks of the Danube, while two others were stationed in Dalmatia which, because of the situation of the country, were in their rear and should Italy require sudden assistance were not too distant to be summoned rapidly, even though Rome was garrisoned by special soldiers, three city cohorts, nine praetorian, most levied in Etruria and in Umbria, or ancient Latium and the old Roman colonies. There were, furthermore, in the most commanding positions in the provinces, allied triremes, the cavalry and auxiliary cohorts, forces no less strong than the others."*[28]

This analysis leads to a fundamental consideration: notwithstanding the extensive list, the size of the force was not excessive, especially if compared to the immensity of the frontiers. Perhaps, as already mentioned, 150,000 men, at the most 250,000, were too few for the almost 10,000 km of frontier to be governed. The highest ranks of the army, starting with the emperor himself, were perfectly aware of this. Such may explain Augustus' despair, in 9 A.D., upon hearing of the loss of three legions in the forest of Teutoburger, reducing the total number from 28 to 25. The initial impression may appear to

Bassorilievi con scene di guerra.
Bas-reliefs of war scenes.

be a theatrical ostentation as in 53 B.C. in *Carrhae*, near Haran in Turkey, the massacre had been much worse: of the seven to eight legions enrolled by Crassus only about ten thousand men returned![29] But the victims of Teutoburger were not recruits from the east lacking all experience, forcibly conscripted by an improvised commander of a motley army for an over-ambitious expedition. These were true legions of the Empire, difficult to replace, not only because of the men that, in some manner and in an Empire of tens of millions of inhabitants could somehow be found, but because of the total loss of equipment. With the current systems of production, as efficient as they were, a lost panoply was neither simple nor rapid to replace, even given the availability of financial sources to sustain such an effort. Consider, for example, that at the end of this century helmets were still being made of bronze, given the limited production of iron ones as a large shop could only produce as few as six each month![30]

As stated in the beginning, institutions have the same two distinctive phases as living beings in the course of their existence, the anabolic or growth phase, extending from birth to the maximum bodily development, and the catabolic phase, or decadence, extending from maturity to death. There is no interval between the two, though in effect there is an interval during which the organism appears to be immune to time. This interval was reached by the Roman Empire under Augustus and continued for approximately two full centuries, during which time the military policy implemented was no longer one of expansion but one of defence, in an increasingly unmistakable manner. The premonitory symptoms of the beginning of the end, though veiled, are present even as early as Augustus, such that:"*by 9 A.D. all the energies of Augustan expansionism had been expended, depleted by the works of Illyria and Germany. It was impossible to conceal this fact but they could cloak what had been a necessity as a virtue. When Augustus died, in 14 A.D., his step-son Tiberius (of the Claudian dynasty, while Augustus considered himself a member of the Julian dynasty) attained command of a vast empire, one that he had helped to conquer, but he was also advised to halt any further expansion of its borders.*"[31]

The catabolic phase appeared initially to be an era of peace, of stabilisation of the frontiers and cautious abandonment of any further expansion. There will be additional conquests, but these only apparently re-propose the era of Roman conquests and expansionism. In reality, they ensued from the strong need to fortify the limes, instituting them along natural tactical obstacles such as the course of great rivers or deserts, to better ensure defendability. The edification of the Ara Pacis in Rome was not fortuitous but was tangible proof of the changed geopolitical concept. Obviously: "*in life Augustus had not always been faithful to what he imposed in his famous posthumous advice to make no further conquests, as reported and openly condemned by Tacitus. Under his leadership many wars were fought on all fronts, wars that led to the annexation of vast territories, including the future provinces of Moesia, Pannonia, Noricum and Rhaetia, beyond the Cottian and Maritime Alps. These last annexations were originally defensive measures, intended to stop the Salassian assaults against travellers crossing the Alps ... The accepted opinion is that the goal of Augustus, even before the great crises in Illyria and in Germany in 6-9 A.D., was limited to creating a 'scientific' frontier on the Elbe, a 'Hamburg-Prague- Vienna' front.*"[32]

According to more modern and admittedly logical theories, Augustus placed no limits on conquests, the more so as the geographic knowledge of the time believed the world to be much smaller. It is likely that he envisaged the same Utopia as Alexander the Great regarding planetary unification. But this theory is not very convincing as it was during his era that the first great geographic representation of the world from the Atlantic to the Indian Ocean first appeared, showing the distances between different locations in minute detail. Correct information on the immense continental distances also came from some of the veterans of the defeat of *Carrhae*, returned after an extremely long odyssey in China [33], eliminating any illusions in this regard.

From its very inception the empire did not appear to have any expansionistic desire and its enormous army was transformed from an aggressive force into a defensive one, with obvious changes in tactics and arma-

ments. This apparently modest change lies behind the transformation of the legions and other armed corps, in a desperate attempt to halt an increasingly imminent collapse and dissolution. This said, the very grandiosity of the Roman military institution is that it had no enemy of equivalent force and capability. If the reconstitution of three legions was a problem for Rome, the establishment of twenty-five for any other State of the era was an unrealisable chimera! If there were ever any doubt in this regard, it vanishes with Augustus' attempt in 6 A.D. to push the dominion of the empire up to Elbe. At the time, of the twenty-eight legions still available, twelve took part in the action, leaving the entire burden of defence to the remaining legions. And in spite of this significant decrease there were no consequences.

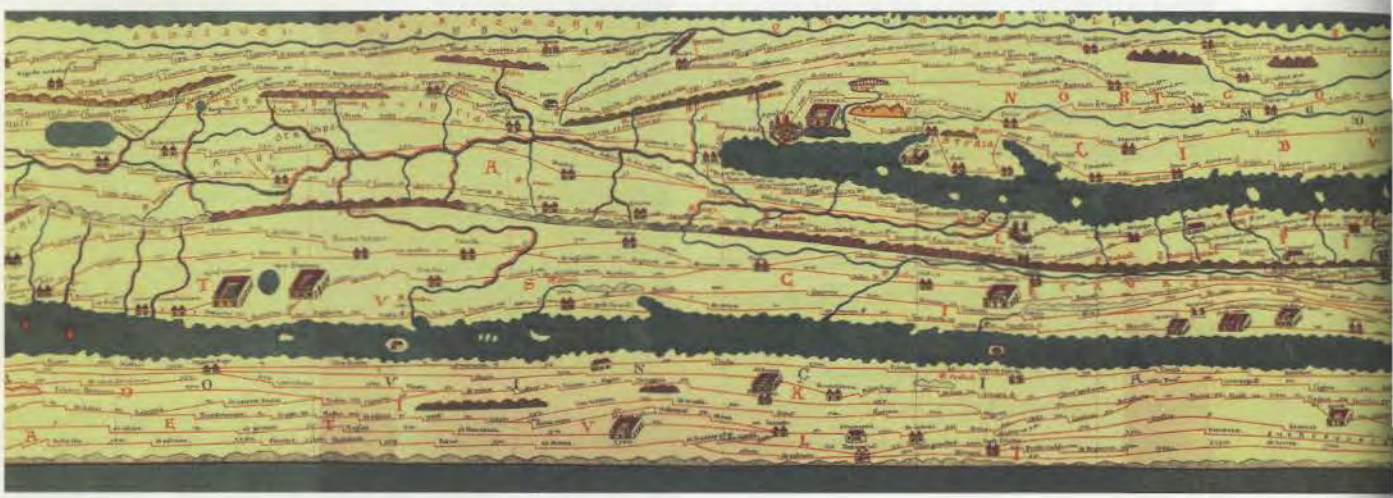
It has been justly noted that:"*the most surprising characteristic of the Imperial security system of the Julian-Claudian dynasty is its 'economy of strength'. Upon the death of Augustus, in 14 A.D., the territories subject to Imperial control, either direct or indirect, included the coastal regions of the entire Mediterranean basin, the entire Iberian peninsula, the European hinterland up to the Rhine and the Danube, Anatolia and, further away , the kingdom of the Bosphorous on the northern coasts of the Black Sea. Control over this vast territory was exercised by a small army, whose contingent had been originally established at the beginning of the principate and only slightly increased later.*

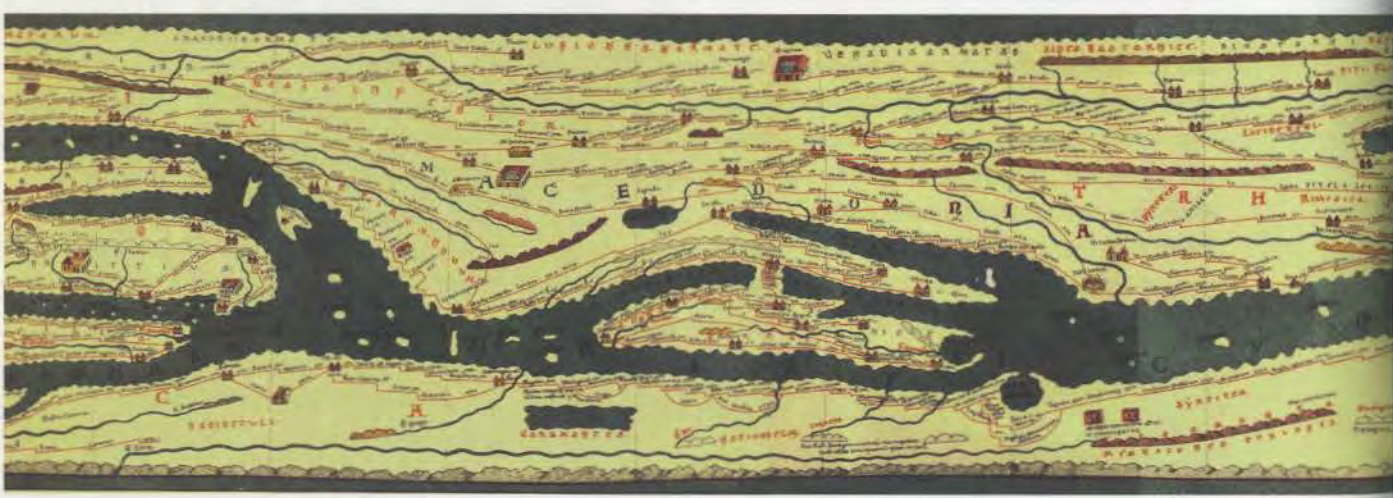
After the defeat of Varus and the devastation of his three legions in 9 A.D. there remained only twenty-five legions for the entire reign of Tiberius (14-37 A.D.). Eight new legions were formed in the period be-

L'Ara Pacis: panoramica e dettagli vari.
Nella pagina a fianco: l'impero di Alessandro Magno.
Nelle pagine successive: la Tabula Peutingeriana.

The Ara Pacis: panoramic view and details.
Side page: the empire of Alexander the Great.
Following pages: the Tabula Peutingeriana.

THYLE
IBERNIA
CALEDONII MONTES
BRITANNIA
MONA ANGLESEY



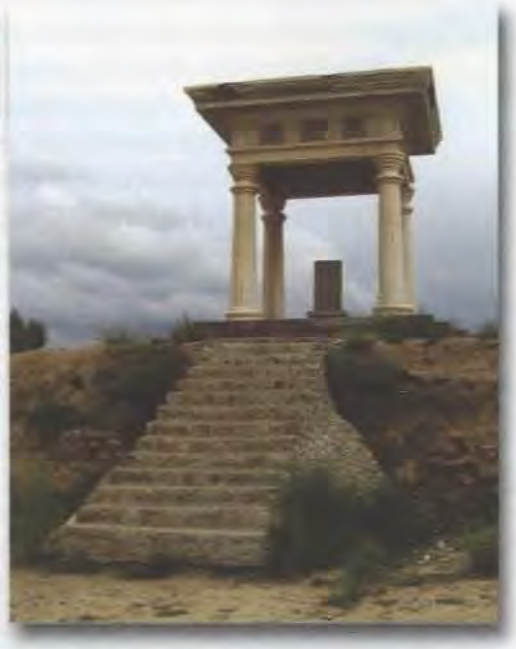


tween the ascent to power of Caligula (in 37 A.D.) and civil war in 69-70 A.D., but four were suppressed, thus under Vespasian there were twenty nine legions: only one more than the original number established by Augustus."[34]

Though there are no doubts regarding the total number of legions and its minor oscillations, there are doubts regarding the size of the legion under Augustus and the following periods and, even more so, regarding the number of auxiliary troops. A brief explanation is required for the latter: the legion that Marius had fixed at 6,000 infantrymen and 120 cavalrymen was reduced to 5,000, divided into ten cohorts, though no changes were made to the cavalry. For a total decrease of approximately 25,000 men, or 10% of the most likely total.

The Tasks of the Imperial Army

The functions assigned to the army upon the advent of the Empire were twofold, the continuation of traditional and strictly military tasks and radical new activities The new activities were for the most part related to the immense territorial and social dimension of the empire, a reality that made the maintenance of legality, public order, collection of taxes and management of the various primary services, highly complex and arduous. As there were no separate institutions for the management of each function, nothing equivalent to our judicial, fiscal, administrative, medical and public safety systems, it was inevitable for these tasks to fall to the army, the only force that was not only armed but also rationally organised. In brief, all those numerous and varied needs could be grouped into two basic branches: the State's external security and its territorial organisation in every geographical context and the internal safety of its citizens and their fundamental rights. This resulted in a new army, clearly different not in external features, organisation and overall entity, which remained more or less the same, but in tasks and competences. In the Republican Era the survivors of a conquered city would never have turned to the commander of the legionnaire camp to ask him for the help of his technicians in building a new aqueduct! Never would they have asked for a legal opinion concerning domestic issues or the assistance of the legion's physicians! Nor would lively cities have risen around their camp, greatly increasing the



Cina, Liquian, probabile villaggio edificato dai legionari romani dispersi dopo la battaglia di Carrhae. Ubicazione topografica, ruderi e monumento ai legionari romani.

Liquian, China, village probably built by the Roman legionnaires who dispersed following the battle of Harran. Topographic location, ruins and monument to the Roman legionnaires.

number of the population! Nor, finally, would the legionnaires stationed in the site have assumed responsibility for eliminating banditry or repressing local crime!

In the final analysis it became, year after year, an armed force engaged on two fronts. The first, apparently prioritary though discontinuous and for approximately two centuries fundamentally dangerous, included the control of the *limes*, with the elimination or active removal of enemies and their initiatives; the second, which we take for granted only in our own modern society but was an absolute novelty for the era, encompassed the entire range of functions mentioned heretofore, including naval surveillance to eliminate piracy and even the earliest civil defence initiatives. This latter activity made its official and terrible debut in the mission conducted by the Praefect Pliny the Elder, with the ships of the Praetorian fleet of Miseno, who rushed to the aid of the population struck by the catastrophe of Mt. Vesuvius in 79 A.D. Thus, since the:"*Roman State never thought of organising a system to maintain order inside its own frontiers, it was the military who carried out police functions.*

Their actions may have been of a preventive nature. But in this case, their role was limited to acts of espionage to keep any fomenters of disorder under control. Stationarii and burgarii oversaw the streets and markets, and the navy tried to prevent the always possible return of piracy. In Judea, decurions were stationed in the villages and centurions in the city; other lower ranking military were responsible for checking what was being discussed in the schools.

But for the most part the military were used for repression. Slaves were to be pursued, as happened with a stationarius quoted by Pliny the Younger, and during the persecutions of the III century it was often the soldiers who arrested the Christians, interrogated them and put them to death. Their primary mission in times of peace was to eliminate brigantry in general; but we must remember that, in periods of civil war, political enemies are often called 'bandits' (latrones); and they can be physically eliminated at any time by a police force conceived specifically for this purpose.

Il Vesuvio in eruzione.
Mt. Vesuvius erupting.

Il Vesuvio, sull'estrema destra, visto da Miseno.
Mt. Vesuvius, on the extreme right, seen from Miseno.

Finally, the army provided the guards for the prisons and ensured the safety of dignitaries by providing ships and escorts."[35]

The great complexity of the two functions implied the unavoidable use of all the resources of technology that were currently available and the development of a vast range of innovations. This permanently transformed the army into the primary, if not sole, body of technical knowledge and scientific research, whose extraordinary importance and influence in the social and cultural progress of the entire West has unfortunately been for the most part ignored by history (36). If we were to provide an even schematic picture of the different civil functions for which the army was responsible and that also represented their technological expression, we could mention:

→ Roads and traffic regulations
→ Communication
→ Produce and water
→ Public and military medical assistance
→ Topography and urban plans
→ Mines and metals
→ Industrial production
→ Social security

Considerations

The recent experience of the European Union that in a period of over half a century abolished frontiers between 27 of the 50 nations of the Old Continent, encouraging them to use the same currency, is proof of the magnitude of the tasks accomplished by the Roman legions. In almost the same period of time, in an area that included not only European nations but also Asia Minor, North Africa and part of the Arabian peninsula from the North Sea to the Red Sea, from the Atlantic to the Indian Ocean, they introduced one law, one language, one currency, one system of measurement, one army, one government, one tax system. All corners of the territory were connected by a single road network that is still the basis for today's roads; every residence had running water, even if to bring the water

they had to build aqueducts 150 km long; every coastal city had a port where all ships, safe from the danger of pirates, could freely trade. And this all became possible not out of a slavish obedience to the rigid rules of a military dictatorship, but because of conviction, as even the most recalcitrant and reluctant understood that this was the best possible solution. Only today, and for understandable reasons, can we understand the complexity of an extensive social security system even if extended only to the military, with the different allowances and payments for retirement. A solution that had to be based on a highly prudent financial administration and a monetary value that remained constant. Certainly these were not fortuitous events, but the result of competences that implied technical skills later lost and systems for implementation later forgotten. An evolutionary step forward for the many ethnic groups absorbed by the Empire, who were thus raised to the same level as Rome without any ideological or racial preclusion. A reality that today does not appear to be either immediate or within our capabilities.

It has been justly pointed out that:"*as much as we might maintain that, on some occasions, the Romans inflicted harsh punishments, we must remember that at that time wars were conducted in a manner that would today be defined as unacceptable for a civilised society... Generally the advantages of becoming a member of Roman society were enormous. The greatest encouragement to happiness in the entire history of man has, after all, been the serene expectation of the common man to live his own life, care for his own land and rear his own children, in peace. The Roman army created conditions that for centuries allowed a farmer to plough his own fields, certain that no one would come to rob the fruits of his labour and, in addition, kill him or enslave him and his family.*

In the Pax Romana, a man could travel from Palmyra, in Syria, to Eboracum, in northern Britannia, without a passport and without ever feeling completely a foreigner. Wherever it went, Rome reproduced a miniature version of the mother city with its markets, baths, temples and all other complexities of the Roman way of life. And it was the creation of these benefits and maintenance of this order for which the Roman army was directly responsible..."[37]

Not incidentally, in the centre of almost all the principal ancient cities of the Mediterranean, one recognizes the orthogonal crossway of two roads: all that remains of the *via praetorian* and the *via principalis*, the two roads that divided the legionnaire camp into four districts![38]

Plans of four European cities that began as Roman legionnaire camps: London, Bonn, Paris and Madrid.

ROME: THE *PRAETORIUM* OF THE EMPIRE

Though from the simply formal aspect Augustus was only the first citizen, the *princeps*, in reality his power encompassed control of the election of magistrates and command of the armed forces. A wholly different concept of the new political structure or, more precisely, a dual power, political and military, concentrated in the hands of a single man for an indefinite period, that led to a change in the very definition of Rome. If the supreme commander of the army, the *imperator*, was also its sovereign, the city was not only the capital and the location of the royal palace, it was also his headquarters, correctly called *praetorium*. For some historians the name and origin of the praetorian cohorts descended from the restricted escort surrounding the Republican magistrates, better known as praetors, when they left for a campaign. The word had a clear military meaning and came from the verb *prae-ire*, becoming *prae-itòrem*, or he *who walks ahead, he who precedes, who goes in front*, that is, the supreme leader of the army. By obvious consequence, all the chosen legionnaires assigned to his personal defence and deployed around his tent, the *praetorium*, were soon defined as *pretorians* or the *Praetorian Guard.*

According to other scholars, and the two theories could coincide, the criteria underlying the institution of the Praetorian Guard and its praetorian cohorts, comes from a debated and debatable practice of the major Roman generals. Around the end of the Republic, the generals were usually escorted by their own body guards of highly elite soldiers, the majority of Germanic origin. Since their primary task was to preside the *praetorium*, they were called *praetorians*. The preference given to recruits of barbarian extraction concealed the generalized diffidence that pervaded the senior ranks of the army and the politicians, always involved in conspiracies.

ARMY CORPS OF THE IMPERIAL ERA

The tremendous number of men enrolled in the legions under Augustus, gave him a flexibility of selection as never before, and the possibility of establishing new military units for the numerous civilian and military functions that the new government structure had made indispensable. The passage from the concept of a State considered as a mere territorial appurtenance of the city of Rome, a sort of expanded suburb, to an Empire that included Rome among its many cities, had brought to light numerous needs and problems that at the time only the military organisation could resolve. Rome, with its more than one million inhabitants, an urban demographic di-

Tubature in piombo a Bath in Gran Bretagna e torretta piezometrica con annessa fontana pubblica a Pompei.

Lead pipes in Bath, Great Britain and piezometric turrets with annexed public mountain in Pompeii.

mension without precedent until almost the last century in any part of the world, also had many complicated and complex problems to be dealt with and resolved, an aspect that is mostly ignored by history.

Water, for example, or food, or even power, systematically ignored but certainly essential since wood was the only fuel used for heating or cooking, were only a few. There were of course the large aqueducts that brought veritable rivers into the city, but what was the internal network of distribution? In Pompeii, no home was further away than 50 m from a public fountain, and many of these were connected to the public network by lead pipes of different sizes: could something similar be done in Rome? We presume that every residence consumed at least 500 grams of bread per day, but how was this produced and how much wood was required to cook it? And how much more was needed for heating or for the kitchen of private houses? Problems and difficulties that, since they have been resolved by our modern technology, lead to the belief that the same could be true of the Romans, a totally gratuitous criteria!

And there were many more issues, certainly no less important, like public safety, intended as protection from crime or from natural disasters like the frequent flooding of the Tiber, or accidental events, such as fires destroying entire sections of the city, something that occurred even more frequently. All challenges for an administration that focused within its hands every aspect of civilian life and that in the end could rely only on its armed forces for solutions. This, according to sources, was the entire military and paramilitary apparatus that issued from the reforms of Augustus.

The Pretorian Guard

In 27 or 26 B.C., Augustus organised his praetorians into a new corps, the Praetorian Cohorts, consisting of 9 cohorts of 500 men each, taken from the ranks of the best Italic legionnaires, specifically from Latium, Etruria, Umbria and Piceno. In the II century three quarters of the praetorians came from central Italy, while the remainder came from Romanized provinces. The cohorts were numbered from I to IX and their emblem was a scorpion, the astrological symbol of Tiberius. Together they made up the Praetorian Guard. At the head of each cohort was a tribune and six centurions for formation in cadres. Specifically:"*the latter are equal with the exception of the trecenarius, who is the first above all and whose name is derived from the fact that he commands the 300 speculatores (another of the prince's guards), and his second in command, the princeps castrorum. The Praetorian cohorts were called equitate, as they included some horsemen (1/5) alongside a majority of infantrymen (4/5).*"[39]

After 14 A.D., Tiberius assigned its organisation to the powerful praefect, Lucius Aelius Sejanus. Around 20-23 A.D. he stationed them in Rome, assigning nine to the surrounding area and three, called Urban Cohorts, inside the city itself. In spite of the immense prestige conferred upon him by the Emperor's trust, Sejanus' career ended on the scaffold in the year 31, when he was executed for treason. However, he was responsible for the establishment of the first large military unit within the city, something never before imagined except within the context of a coup d'état,

Bassorilievi con pretoriani.
Bas-reliefs with praetorians.

for there was a very ancient tradition that did not allow military to be stationed in Rome itself. But times were completely different now and resentment at seeing them on patrol through the city, or marching in a parade lavishly equipped, soon disappeared. However, to avoid any conflicts or mutual intolerance, even the praetorians had their own camp.

Lawrence Alma-Tadema, 1867: I pretoriani proclamano imperatore Claudio.
Lawrence Alma-Tadema, 1867: The praetorians proclaim the Emperor Claudius.

This camp was the *Castra Pretoria*. It was located between the Viminale and the Esquilino, where the enclosure wall is still intact and its military use basically unchanged. Its size, 440x380 m for a total of 16.72 ha, is slightly smaller than a legionnaire camp (between 18 and 20 ha) which seems to highlight its not wholly military nature. Despite the open-mindedness of Sejanus, the *Castra Pretoria* was outside the Servian walls, that is, outside, though by very little, of the circle that delimited the ancient city. An important detail because since Rome had no walls until the Aurelian walls that were erected between 271 and 279, it emphasized observance of the ban.

The option to limit the total number of Praetorian Guards to only nine cohorts, rather than the traditional ten of the legions, also betrays a repugnance to this type of equivalence as it would have denoted the presence of a legion in Rome, a scandal that would not be tolerated by the population, not even in the new context. Their number was later increased to 12 by Caligula, then to 16 by Vitellius and finally limited to 10 by Domitian: but by this time no one was scandalized by anything! From the military aspect the:"*Praetorian Guard, composed of Roman citizens, was the emperor's personal guard ... [and both] to prevent the danger of conspiracies and because the presence of such a large force inside the capital decidedly contrasted with Republican traditions, only three cohorts were stationed in Rome; the others were dispersed in the adjacent towns. At first each cohort was led by a tribune, while Augustus held the overall command. But in 2 B.C. command of the guard was transferred to two praefecti pretorio of the equestrian rank, and this dual command was almost always maintained.*

The praetorians were selected with great care and enjoyed many privileges in areas of pay and promotions, [equal] to legionnaire centurionates. The period of service, set at twelve years in 13 B.C., was increased to sixteen in 5 B.C. In the beginning, it appears that the pay was 375 denarii a year, but by the end of the reign of Augustus it had been increased to 750, and reached 1,000 denarii under Domitian. This was much more than the legionnaires, as was their retirement settlement, fixed by Augustus at 5,000 denarii. In his will Augustus left the praetorians 250 denarii each, compared with the 75 for the legionnaires."[40] Since this was a body dedicated exclusively to the protection of the emperor and his close collaborators and family, in the end it was involved in everything that concerned Rome, from managing performances, to collecting taxes to helping the cohorts of *vigiles* in fighting fires!

A brief comment regarding the armament of the praetorians, justly considered more as parade than actual combat dress, as exemplified by the helmet, often of the Attic style and a legacy of the archaic period. But when they did take part in military campaigns their armament was very similar to that of the

legionnaires. The Praetorian Guard was systematically involved in innumerable palace conspiracies and in the acclamation of the different emperors, usually triggered by its greed for extraordinary bounty. For example, following the assassination of Caligula, Claudius ascended to the throne by acclaim of the Praetorians, and granted to each 15,000 sesterces. After an initial disbanding by Vitellius in 69, who installed 16 cohorts of legionnaires stationed in Germany in their stead, the corps was permanently suppressed in the year 312.

The Speculatores

The *Speculatores*, whose name comes from the Latin verb *speculare*, *to look around*, *to observe* could be freely translated as explorers or scouts. Actually, they were an élite corps selected from the ranks of another élite corps! They were taken, in fact, from the Praetorian Guard, specifically from the units that provided close escort to the emperor, body guards who never abandoned him, in any circumstance and context of the day. The 300 men that made up the corps should have represented the very best, at least from a certain aspect, of the Roman army. They were commanded by a specially selected centurion called *Centurio Speculatorum*, considered hierarchically pre-eminent among all the com- manders of the camp. Since the speculatores were also praetorians they lodged in the *Castra Pretoria*, together with the rest of the Praetorian Guard.

Moneta che rievoca il corpo degli Speculatores.
Coin depicting the corps of Speculatores.

From a merely operational aspect it is likely that the *speculatores* also carried out the functions of forward scouts during some of the campaigns.

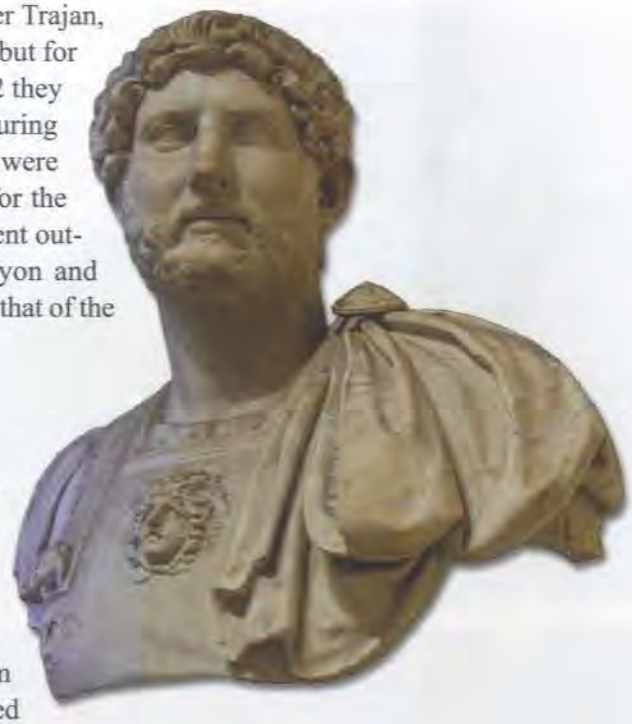
The Urban Cohorts

In addition to the nine Praetorian Cohorts, in 13 B.C. Augustus also established an additional three, calling them Urban Cohorts. This was a significantly more modest corps although he designated them as cohorts X, XI and XII, almost as if to emphasise their contiguity with the original numbers. This was the last armed force still commanded directly by the Senate and its commander was the Praefect of the Urbe, chosen from among the senators. Not infrequently, when the interference and intimidation of the praetorians became more violent, it was the Urban Cohorts that protected the Senate. Claudius, certainly mindful of such interventions, increased their number to seven, however, at the end of the first century they came under the command of the praefect of the Praetorium.

According to Suetonius the Urban Cohorts were responsible for protecting the city just as the Praetorians were to protect to emperor, indicating a police function of military extraction. Each cohort consisted of 500 men led by a tribune and six centurions: it may have also included mounted contingents, like the Praetorian Cohorts. During the brief reign of Vitellius their complement appears to have been doubled to 1,000 men per unit, only to then return to 500 with Vespasian and again increased to 1,500 under Septimius Severus.

The Urban Cohorts were quartered together with the Praetorian Cohorts, where they remained until 270, when Aurelian had a special camp built specifically for them, called *Castra Urbana*, located in the Campo di Marte. It is also likely that some of the units were stationed in different parts of the city, very much

like police stations. Not infrequently, and especially under Trajan, the Urban Cohorts were also used in military campaigns, but for the most part their duty was to prevent any revolts. In 312 they escaped the suppression of the Praetorian Cohorts, but during the same century they ceased to be a military body and were transformed into a section of clerical officials working for the administration. We know that some of these units were sent outside of Rome, in particular to mining deposits near Lyon and Carthage. Their equipment and armament was the same as that of the Praetorian Cohorts.



The Equites Singulares Augusti

This was a special corps of the Roman cavalry, thus the designation *singulares*, which is to be interpreted as special. The corps was created upon the discovery of the scarce loyalty of the Praetorian Guards and it became the custom, as early as the age of Augustus, to take a contingent of 100 to 500 body guards, *corporis custodes*, from the Germans and Batavians, the least likely to be involved in plots and betrayals. For reasons that are easily understandable, this formation had to be disbanded following the disaster of Teutoburger, but was reconstituted and permanently militarized less than five years later by Caligula. Other dissolutions and other reconstitutions will alternate in the following eras according to the wishes of the emperor at the time. His personal protection was provided by a cavalry corps of special distinction, the *equites singulares*, who were probably formed by Trajan, divided into units called *numerus* and initially numbering 500 men, soon increased to 1,000. They were commanded by decurions, under a decurion *princeps*, and a tribune, in turn subject to a praefect of the praetor.

Their lodgings were in the vicinity of the Lateran and a garrison was built on the Celio during the I century, housing two detachments with contiguous functions. Of these:"*the 'peregrini' acted as a sort of secret police, charged with enforcing the orders of the sovereign throughout the Empire. They obeyed the centurions who in turn were under a subpriceps and a princeps. The 'frumentari' (foragers), formed into units and lodged in Rome, probably under Trajan, or at the latest under Hadrian, acted as couriers; when necessary they carried out discreet executions of opponents of the regime, and were considered spies: they have also been considered as the ancestors of the sadly famous agentes in rebus of the Low Empire. But their small number (they functioned as a numerus of 90-100 soldiers) probably limited their misdeeds...*"[41]

The provinces also had equites singulares, not to be confused with the previous ones, but who may have had the same name because of a similarity of tasks. They were assigned to provincial governors as escorts and to perform other missions.

Busto di Adriano e la nota statua di Adriano Trionfatore,conservata ad Instambul.
Bust of Hadrian and the famous status of Hadrian the Conqueror, preserved in Istanbul.

Veduta del palazzo del Laterano e della Basilica, sorti sui ruderi della caserma degli Equites Singulares.
View of the Lateran Palace and the Basilica, built on the ruins of the barracks of the Equites Singulares.

THE VIGILES

As previously stated, the Romans did not have a real police corps similar to those of the modern era and that now exist in almost all nations, for these functions were performed by the army: at least in the provinces. But something of the sort must certainly have existed in Rome and is recognizable in the seven Cohorts of Vigiles. They were instituted in 6 B.C. by Augustus for a dual purpose: to provide continuous patrols in the city during the night, and to extinguish fires, a problem as devastating as it was frequent in a city with so many wooden structures. The number initially consisted of barely 600 men, thus rather than cohorts it would be more correct to define them as centuries! Very soon, however, they increased to seven thousand.

They were divided into seven units because of the fourteen regions into which the city was divided, so that each cohort was responsible for two areas. In order to provide a rapid and more effective service, since the quicker they intervened the sooner could the fires be extinguished, fire departments were instituted in the different regions. Called statio, stations or small garrisons, they were located in specific focal points that facilitated arrival on site and immediate reception of alarms launched by special look-out towers, called excubitorium. On the street now called *VII Coorte dei Vigili* in Rome, there is still the original entrance to one of these stations, of moderate architectural value.

To better assess the difficulty of their work we must remember that the buildings to be monitored and protected from fire were approximately 150,000, divided into 423 districts, also called *vici*, occupied by almost one million persons. This apparently excessive number is the result of very precise calculations, thus divided:"*there is also*

Roma: ruderi di una caserma dei vigili del fuoco di epoca imperiale.

Rome: remains of a firemen barracks from the Imperial Era.

the statement by Augustus, in his Res Gestae, when... in 5 B.C. «he gave sixty dinars to each of the 320 thousand citizens » of the Roman plebeian class. Now, according to the terms used deliberately by the emperor, this distribution was made only to adult males... excluding the women and children under the age of eleven, who together with the men were part of the Urbs. Thus... the Roman population... included 675 thousand cives. To these must be added the garrison of about ten thousand men, who lived in Rome ... the multitude of foreigners therein domiciled, as well as the infinitely more important one of the slaves. So that we are brought by the same Augustus to assess the total population of Rome under his leadership to a very approximate, and perhaps even more than, one million."[42]

The vigiles had two sets of equipment: for night patrols their equipment included a lantern while for extinguishing fires, in addition to axes, hooks, shovels, saps, cords and wet blankets to smother flames, they also had special siphon carts. These were four-wheel vehicles equipped with hydrants and pipes of leather or thick fabric. The hydrant was probably a dual effect pump similar to the Ctesibius pump [43], that siphoned the water from the tank placed on the cart, open on top so that it could be constantly refilled probably using chains of buckets. Sources indicate that the corps was neither military nor militarized, something that will happen later on. It was commanded by a mounted soldier with the rank of praefect of the vigiles, assisted by a sub praefect. The ranks included men of the lowest class, since this was dirty and risky work. In fact, in order to stimulate enrolment Tiberius decided to grant them citizenship after only six years of service and even so the period had later to be reduced to three years to attract new recruits. In spite of the reluctance to join, the work of the firemen was undoubtedly important, such that Claudius stationed three cohorts of vigiles even in Pozzuoli and one in Ostia, the largest ports for the majority of cargo destined for Rome. After it became a completely military institution in the III century, it was also established in numerous other cities of the Empire.

The Auxiliaries

One of the principal innovations introduced by Augustus within the army was the creation of auxiliary units. This was not in itself a novelty as legions had been marching alongside formations of lesser military importance for centuries. The true novelty was the transformation into auxiliary units of what had heretofore been known as allied forces. With this reform such detachments became part of the regular army and were no longer considered of a lower order, although called allies. Certainly this promotion did not take place immediately, but from that time the tendency became progressive and irreversible. A modern day comparison of these auxiliary detachments would be our modern regiments, evolving from simple support functions to autonomous intervention units that may even act independently in combat situations. The auxiliary detachments normally consisted of 500 or 1000 men and were accordingly and respectively identified as quingenary or miliary. According to sources Augustus:"*organised his auxiliary forces into three types: the cohors peditata, the cohors equitata and the ala. In this initial period all ... consisted of approximately 500 men; in every regiment the number was based on the number of a legionnaire cohort. During the I century more regiments were created for all three types; consisting nominally of 1,000 men, these units were called milliaria... The change probably took place during the reign of Vespasian, a theory supported by the oldest epigraphic evidence of a miliary regiment, even though Josephus Flavius indicates the presence of these units in Vespasian's infantry during the Judaic Wars as early as 67 A.D.*"[44]

Recalling the march of Titus up to Tolemaide, where he met with his father, he states that:"*to the two legions under his command –the most famous being the fifth and the tenth – he added the fifteenth. These three legions were assisted by eighteen auxiliary cohorts; they then added five cohorts and a cavalry wing from Caesarea and another five cavalry wings from Syria. Of the cohorts, ten had approximately one thou-*

sand men each while the other thirteen had each six hundred infantrymen and one hundred twenty horsemen."[45] The explanation eliminates all doubts as in the passage:"*Josephus appears to report official data, thus reliable even in the details, such as the division of the twenty-three cohorts into ten milliariae, that is one thousand (nominal) infantrymen each, and thirteen quingenariae, or five hundred (nominal) infantrymen (these last were equitatae, and included a mounted contingent of one hundred-twenty).*"[46]

Masada: panoramica dei resti del campo del I sec.
Masada: panoramic view of the remains of a camp from the I century.

Like all units defined according to their complement, the actual number most likely did not correspond to the theoretical one but was in fact smaller. Thus the units were almost always smaller, although the total number of auxiliaries present in a province or territory must justly be considered the same as the legionnaires who were also there. Apart from the different logic of aggregating auxiliary regiments, their true peculiarity consisted in their primary specializations, something that exempted the Romans from forming similar detachments within their legions. For example, they had units of archers, slingsmen and horsemen, capabilities that became stable and permanent distinctions, because of the radicalization desired by Augustus.

According to the most accurate studies, the total number of auxiliaries must have reached 150,000 men, almost equal to that of the legionnaires. Each legion was assigned various auxiliary regiments, that at times were stationed in locations distant from the main base. In many provinces the garrisons were formed only by auxiliaries. Often the sources distinguish them into *wings*, *cohorts* and *numbers*, a division vaguely similar to that of the legions, in which the wings were the *élite* units. These were large cavalry squadrons, in turn divided into 16 *turmae* for the *quingenary* units and in 24 for the *miliarie*, but this second formation does not seem to have existed prior to the Flavii. The Commander of the quingenary unit was a praefect, while the military unit was commanded by a tribune, with a subpraefect under him, at least in the beginning of the Empire.

Regarding the *cohorts* of the auxiliary regiments, we must suppose they were formed of 6 centuries for the quingenary and 10 for the miliary, exactly as described by Josephus Flavius. Among these some were more prestigious as they were composed of Roman citizens who had enrolled voluntarily and thus enjoyed the same respect as the legionnaires. The leaders of the cohorts were the centurions, who in turn were under the command of a centurion *princeps*, subordinate to a praefect in the quingenary units, or to a tribune in those formed of Roman citizens and in the miliary. To make the situation even more complicated there were also several auxiliary cohorts called *equitate*. A distinction that translates as *mounted*, or with horse,

but that in this case indicates mixed units, those that included 6 or 10 centuries of infantrymen and from 3 to 6 squadrons of horsemen, according to whether they were quingenary or miliary, once again in perfect accord with the description of Josephus Flavius. There remains to determine the actual tactical role of these cavalry formations: some scholars believe the men dismounted from their horses at the time of combat to fight on foot like any infantryman, the horse being simply a means of transportation needed for fast movements. Others claim they fought on horseback as an actual cavalry, a theory supported by numerous bas-reliefs portraying soldiers on horseback in the act of spearing the enemy on the ground.

It is interesting to note that in his youth Pliny the Elder wrote a brief treaty, one that was much admired by the military, on firing from horseback .[47] A topic that at the very least confirms that Roman horsemen also engaged in mounted combat. Obviously, the auxiliaries were better at it, as this was one of their primary methods of combat. The topic is highlighted by Hadrian in a speech made during one of his visits to the army of Numidia, in 128 A.D., before the men of the *Cohors VI Commagenorum* equitata:"*It is difficult for the cavalry of the cohorts to make a good impression, it is even more difficult that it not disappoint after the exercises of the auxiliary cavalry. The latter dominates the ground better, has a greater number of men to launch javelins; rotates in close order and performs an impeccable Cantabrian manoeuvre; the beauty of the horses and the elegance of its equipment is in harmony with the level of pay. Nonetheless, and in spite of the heat, you have not been tedious as you have done quickly what you had to do. In addition you have launched stones with your slings and fought with missiles. You have ridden spiritedly.*"[48] Hadrian's judgment

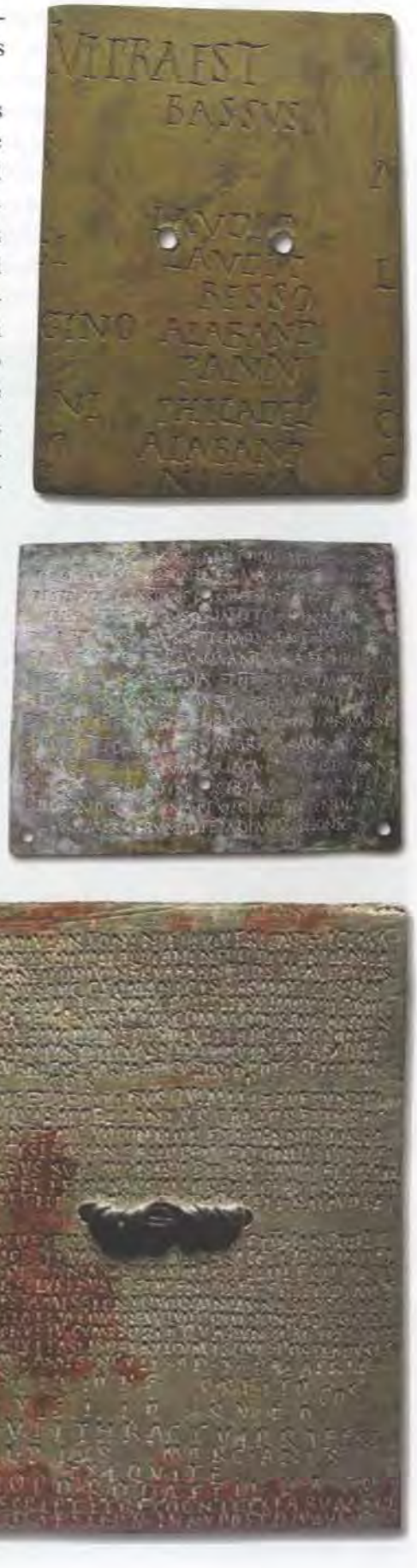
Rievocazioni della XXX Ulpia in marcia e sfilamento.
Re-enactements of the XXX Ulpia on the march and in parade.

concerning the tediousness of the manoeuvres of a *coorte equitata*, appears to confirm its inferiority compared with that of a wing, which was also better paid.

There were also the *numeri*: militarily this definition indicated units that did not have the complement nor the technical requirements to be considered legions, wings, or even cohorts. They could be considered as formations of a variable number, changing according to the circumstance. According to another interpretation, the numeri were units of soldiers who were not Romans but men had not only not abandoned their principal ethnic connotations but had in fact exalted them, especially combat tactics and types of armament and equipment. Such were, for example, the Mauri horsemen that the Romans continued to define as barbarians, without ever renouncing their valid support. The number of these numeri oscillated arbitrarily: some had 1,000 men, others 500, others yet only a few hundred. Their leaders were, in decreasing order, tribunes, praefects or *praepositi*, that is centurions detached from the legions.

The progressive influx of men coming from subjugated populations and from Romanized citizens, attracted by money and career, around the end of the II century increased the dignity of the *numeri*, equating their compensation to that of the auxiliary troops of the I century. As for the principal designations of the different units: "*they follow the same rules as the legions for their names: there are three basic elements - type, number and name* (cohors I Afrorumm, ala I Aturum, numerus Palmyrenorum; this is based on the model of the Legio I Augusta, etc.). *The third element normally designates the population from which the soldiers were initially recruited. But it may also come from the name of an individual: in such case it would be the person who had first had the honour of commanding the troops ... At times, the name is followed by the name of the emperor who created the unit... In some cases additional information is provided, honorary distinctions or awards...descriptive titles... and indication of the province in which the garrison is located.*"[49]

Apart from pay and career, certainly very attractive factors, the principal motivation of every auxiliary soldier, whether cavalry or infantry, was always to attain Roman citizenship upon his leaving and the opportunity to return home with this prestigious and hereditary distinction. Retirement, if ordinary, was reached after 25 years of service, and the privileges to which the soldier was entitled were extended to his entire family. In this regard, whereas the Roman legionnaire normally did not receive any diploma upon retirement as such certification was considered useless for his future activities, for the



Vari tipi di diplomi militari.
Different types of military diplomas.

auxiliaries the diploma was fundamental. The word diploma comes from the Greek verb *diplóo, to double*, from which comes the Latin *duplum*, and was used to indicate the double bronze plate that the legionnaires and the auxiliaries received when they enrolled. The two sections were joined by rigid seals and in their interior was etched the information of the recruit and the date he began service. An authentic copy, also sealed, was kept in the archives of the Tabularium of Rome: upon their leaving, the seals of both were broken and the inscriptions compared to make certain they were identical and thus valid.[50] This was followed by the definition honesta missio and the acquisition of the civilian privileges connected with retirement, the greatest of all being citizenship, the right to enter into marriage, *conubium*, and the legitimisation of children. The soldiers of the Praetorian and Urban Cohorts also received a similar diploma at the conclusion of their period of service, authorising them only to contract marriage.

From a practical perspective the document, of which we have very many samples, was made of two thin bronze plates measuring approximately 15 x 12 cm and weighing approximately 200 g, held together by a sealed metal wire. Inside was the soldier's service record that could only be shown in case of need by breaking the seal that had been previously placed in the presence of witnesses. The text within normally contained the name of the emperor who had granted the benefit, the list of military units involved, the province of the garrison, the name of the unit commander, merits acquired, privileges granted and the date and name of the holders of the diploma and the place where the original document was being held. There were many variations but these were the basic similarities. When the army was re-organised by Vespasian, it appears that all the auxiliary units that had distinguished themselves in battle received citizenship en masse even prior to the conclusion of their period of service. Which would explain the strong inclination of auxiliary regiments to fight even by themselves, such as in the battle of *Mons Graupius*, in Scotland, in 84 A.D., when they fought the entire battle while the legions were deployed on the ramparts, almost as spectators.

From a purely logistical aspect, the Romans appeared to have been highly diligent in ensuring that the auxiliary regiments were stationed within their area of recruitment, assigning them to the closest bases. This was done to promote greater psychological tranquillity in the recruits, especially the younger ones. In fact, when this precaution had to be neglected, there were cases of rebellion and mutiny in at least a couple of circumstances. The merit and the reliability of the auxiliary troops, though never absolute, increased over time and with improved specializations they became an indispensable support on the battle field, especially during the various transfers of the legions, risky under any circumstance but especially so after the tragedy of Teutoburger. Josephus Flavius describes the deployment of Vespasian's legions toward Galilee thusly:"*the light troops and the auxiliary archers were in the forefront, to push back any enemy incursions and to explore forests that could be used for ambushes. They were followed by a contingent of Roman soldiers from the infantry and by the cavalry with heavy weapons, followed by a detachment of ten men for each centuria, carrying their own equipment and the instruments required to mark out the camp; after them came the specialists in straightening the roads. Behind this last, Vespasian had placed his personal baggage and that of his legates, with a strong cavalry escort. He then followed on horseback, together with elite infantry and cavalry troops and his personal guard armed with spears. Then came the legions' cavalry units... They were followed by the mules carrying the siege towers and other machines. Then came the legates, the praefects of the cohorts and the tribunes, with an escort of selected troops. Then the insignias that surrounded the aquila or eagle ... followed by the buglers, and behind them the compact column in rows of six. Behind the infantry there followed all the attendants for each legion, leading the mules and other beasts of burden carrying the soldiers' baggage. At the end of the column were the groups of mercenaries and, finally, for safety, a rear guard of light and heavy infantry and a large cavalry corps.*"[51]

Rome: remains of the Tabulariumnel foundation of the Senatorial Palace.

Whatever the size and the merit of the auxiliary units and the other armed forces, the basic nucleus of the Roman army, even during the first centuries of the Empire, was always the legions.

The Legions of Augustus

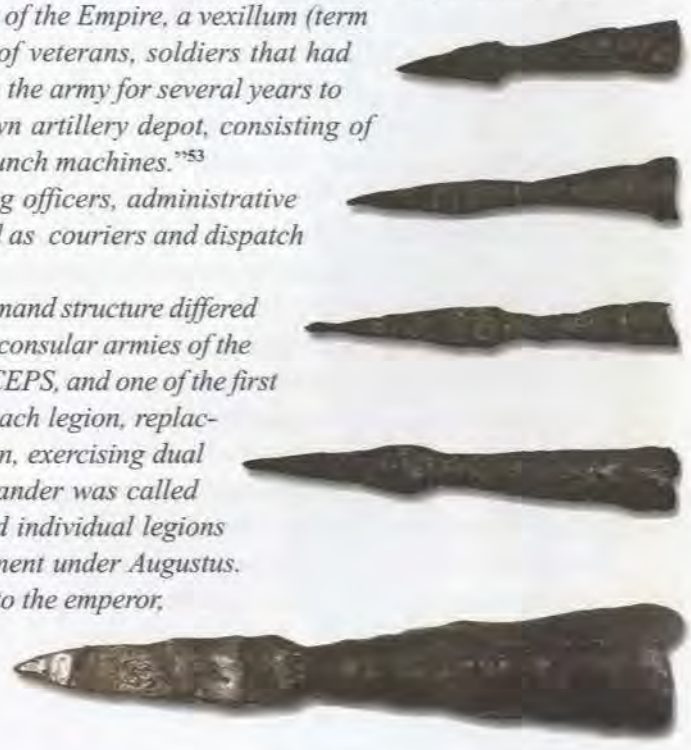
The legions that served Augustus were numbered from I to XXII. But this was not a biunivocal correspondence, as several units had the same number, an ambiguity that explains the need to provide each with a special definition, almost a sort of cognomen, for identification. According to some historians, his choices reflected a preference for the legions that had belonged to:"*his former colleagues of the triumvirate, Mark Antony and Marcus Emiliaeus Lepidus; the latter's army passed to Octavius in 36 B.C., and four numbers are duplicated:* IV Macedonia and IV Sythica, V Alaudae and V Macedonia, VI Ferrata and VI Victrix, X Gemina and X Fretensis*; one is tripled:* III Augusta, III Cyrenaica and III Gallica. *Some of these names were doubtless of official origin, but others derived presumably from the name of the province where the legion had distinguished itself. In some cases a surname was sufficient, as for the V Alaudae (the larks), a legion created by Julius Caesar. Later, the emperors created new legions either to replace those lost in battle or to increase the legionnaire force, usually before a campaign or to confront a new danger. The names of these new legions may be indicative of their origin: for example the I Italica was formed by Nero using Italic troops and the* I, II and III Parthica *were formed by Septimius Severus for his campaigns in the East. The creation by Trajan of the* XXX Ulpia *victrix indicates that at the time of its formation there must have existed another twenty-nine legions. In fact, in the first two centuries of the Empire the number of legions remained relatively stable at twenty-eight, as had originally been envisaged by Augustus.*"[52]

Regarding the enrolment of each legion:"*this was composed of ten cohorts. Each designated by a number, divided into six centuries each, identified by the name of the centurion in command; the ancient division into hastati, princeps and triarii, the three echelons of the legionnaire heavy infantry, was maintained - even when all distinction between them had completely disappeared - for simple administrative reasons, in order to identify the different units and establish the internal hierarchy of the centurions. Every cohort was composed of 480 men, except for the first, which had 800.*

Each legion had its own cavalry contingent, 120 men, divided into three turmae or squadrons; and within each unit there was, during the first centuries of the Empire, a vexillum (term indicating any unit without a fixed establishment) of veterans, soldiers that had concluded their period of services but remained with the army for several years to perform specials tasks. Each legion also had its own artillery depot, consisting of about sixty ballistae and onagri, various types of launch machines."[53]

The total number of men in each legion:"*including officers, administrative personnel and a detachment of 120 men who worked as couriers and dispatch riders, amounted to approximately 6,000 men.*

Under Augustus and his successors, the army's command structure differed from that of the Republican era. The consular and proconsular armies of the past were placed under the direct control of the PRINCEPS, and one of the first Augustan reforms was to assign one commander to each legion, replacing the tribunum militum, formerly six for each legion, exercising dual command for two months at a time. The new commander was called legatus legionis. Caesar had used legati to command individual legions but the official title and posting only became permanent under Augustus. The legates were selected from among the men loyal to the emperor,



Palle di balista e cuspidi di dardi di catapulta.
Balls and darts launched by catapults.

at first from within the ranks of the ex-quaestors and ex-praetors, but toward the end of the I century usually from the latter. If the legates served the emperor well, they could hope to become consuls and governors of a province.

There were still six tribunes for each legion, but they were now subordinate to the legatus legionis; of these, one only was due to a potential senator, the other five were assigned to citizens of the equestrian rank. The first, who acted as deputy commander of the legion and was called tribunus laticlavius, was a young man about the age of twenty who served in the legion for a brief period before entering the senate as a quaestor. This military experience was required to train him for future command of a legion, in a career that encompassed civilian and military duties. His equestrian colleagues, the tribuni augusticlavi, had prevalently administrative tasks. Of an age between thirty and forty, they came from municipal magistratures or had commanded auxiliary cohorts. The more fortunate or the more able were later destined to become praefect of a wing."[54]

In view of the above, it appears evident that all of Roman public life was structured according to the constant osmosis between the military world and the political world. No government career was possible without experience in the legions and there was no criticism or reluctance regarding this requirement as military service was considered similar to an academy or university offering expert training in the more advanced disciplines. From this aspect also, clearly the army was not an institution dedicated exclusively to systematic violence, for if such were the case its teachings would not coincide with democratic politics, even in its mild ancient meaning in general and Roman in particular. Because of its rigid discipline, the strong responsibility connected with every function and the need to learn the numerous technical skills required for complex tactics and weaponry, army service provided an advanced education for future Roman administrators. And all were proud of this apprenticeship, as testified by the numerous depictions of famous personalities wearing a military uniform.

To return to the hierarchy of the legion, the *praefectus castrorum* was the third person in command and the highest ranking officer on permanent active duty, as he came from the centurionate. Previously he had to have been the *primis pilus*, or chief centurion, the highest rank of the career military. His experience was thus very vast and so it was logical to assign him the responsibility of constructing the camp and controlling the depots as he had all the centurions and other lower ranking officers under his direct command. In the absence of the legate and the first tribune, a frequent occurrence in the course of combat, he assumed command of the entire legion.[55]

It may seem strange at first for a lower ranking officer to be the highest ranking career military within the legion, but in the Roman army this was the highest level for career legionnaires. Higher ranks were not accessible militarily and the men who held these positions would actually be considered as functionaries militarized for a brief period and who were easily interchangeable among themselves, without causing any difficulties to the conduct of the legion. A result that depended upon two very precise and concomitant factors: previous military experience, without which they could not accede to any administrative positions, and excellent subordinates, such as the centurions, to ensure continuity of command. The centurions were the support structure of the army, though apparently having modest authority, perhaps even less than our modern captain. Under their

Statua di Augusto detta "Augusto loricato", custodita nei Musei Vaticani.
Statue of Augustus called "Augusto loricato", on display in the Vatican Museums.

command was:"*a century consisting of eighty men. The centurions of each cohort, except the first, were designated by order of rank. As in the Republican army, each centurion held the title of optio* ad spem ordinis.

Under the centurionate were three principal categories of soldiers: principales, immunes and milites. It is doubtful whether these categories were recognized as such prior to the first half of the II century, but it is certain that the majority of the tasks performed by members of each category go back to much earlier times. Basically, the principales were lower ranking officers who received double the salary of the legionnaires (the duplicarius) or one and a half times as much (the sequiplicarius). The immunes, were soldiers who received a basic pay, but were exempt from heavy work and were assigned to special tasks. The milites were common legionnaires, who performed all the ordinary tasks."[56]

Ranks lower than the centurion and belonging to the principales class were, in decreasing hierarchical order, the *signifer*, or the bearer of the standard, *the optio*, who could replace the centurion when the latter was absent and the *tesserarius*, assigned to guard duty and, specifically to the daily password. All such officers could aspire to a full military career up to the rank of centurionate. The bearers of the legion's aquila, the *aquilifer*, and the *imaginiferi*, who bore the image of the emperor of the time and of previous ones who had been deified, did not belong to this rank. Because of their sensitive function they were associated with the command staff, though they too were slightly below the centurionate.

Another peculiarity of the Roman legion, evident since the Republican era and further exalted during the Imperial Era because of the evolution of military technology, was the great number of legionnaire technicians, experts in a vast range of professional and craft activities. This category, called *immunes*, as they were exempt from assisting in preparing the camp and from any manual work in general, included topographers, architects, physicians, engineers, carpenters, metalworkers, makers of bricks, plumbers, stone cutters and woodsmen.[57] Each legion was an autonomous replication of civil society, perfectly capable of aggregating and organising cities around its base, having all the structures and services of the era without the need for any further interventions, even on a purely material level such, for example, as for the production of bricks, tiles and lead pipes. Incontrovertible proof of this singular reality are the symbols that each legion impressed upon its products, from individual bricks and tiles to lead pipes, marks

that not only gave the legion's number but also often its emblem.

Considering the vast territorial postings of the various legions during the Imperial Era, we can understand that it is thanks to their presence and their productive capabilities that every corner of the empire attained the same level of technology and the same cultural knowledge. From Britannia to North Africa, from Spain to Asia Minor, there was an absolute standardization of the technological items produced by the shops of the legions, thus it was possible to install a spare part made by a legion stationed in Germany in a device built by another stationed in Palestine. The *milites immunes* also were involved in massive industrial production between June and October when the adverse weather conditions of the northern regions halted all military operations. We must also add that the assistance of legionnaire technicians with more advanced skills, such as architects and topographers, was often requested by the nearby civilian communities to solve problems that exceeded their capabilities. The layout of an aqueduct and related elevation, for example, were one of the most needed interventions, as only the instruments and skills of the legionnaire engineers could ensure the indispensable precision required. The same holds true for military medicine, its high level reflected in military hospitals, called *valetudinari*, institutions described further on. A brief mention is also merited by the legions' administrative staff, responsible for the tabularium legionis, a simultaneous archive and accounting office. Its members were the *librarii*, similar to chancellors, and the *exacti* or accountants, coordinated by a *cornicularius*.

The Vexillationes

A modern definition of the Roman *vexillationes* would be detachments, or units of a sizeable number detached from their units and temporarily attached, for pressing needs, to another unit in combat or in a zone of combat. The original term, vexillationes, obviously comes from the word *vexillum*, the standard around which those soldiers were grouped when preparing to undertake a particular mission. By obvious derivation, the members of the group were called *vexillari*, which coincidentally corresponds to the definition of the standard-bearers of the cavalry. Since movements of groups of soldiers, of any size, were rather frequent, the definition of vexillatio could not be too generic and was reserved exclusively to officially recognised transfers, with special orders and a true *vexillum*: a definition that presupposes a precise juridical basis even more so than a military one.

Bassorielievo con abaco da calcolo e reperto.
Bas-relief with abacus and remains of an abacus.

Moneta con vessilli e ricostruzione di vessillo legionario.
Coin with vexillum and reconstruction of legionnaire vexillum.

Once the manoeuvre was completed and the new destination reached, the soldiers of the vexillatio passed under the command of the new location. For example, a permanently stationed provincial army could send an entire legion or a simple detachment to a nearby or not too distant area of operations. These contingents were formed by taking a certain number of men - two to four cohorts - from each legion. The vexillatio had, therefore, from 1,000 to 2,000 soldiers, a number and procedure that remained unchanged even when applied to auxiliary units.[58] Of course the practice of using a vexillatio was not envisaged solely for actual field operations. In some cases they were used for works of absolute urgency or known need, such as the construction of a fort or a road. As for the command of the vexillationes, though theoretically this was to fall only on officers of senatorial rank if the vexillationes included Roman citizens, and to officers of the equestrian rank if composed only of barbarians, in reality there were frequent exceptions, especially during the I century, when command was often assigned to the primus pilus, or first centurion.

A special case was when the detachment was not entitled to a *vexillum*, or did not fall under the juridical norms for entitlement, mostly due to lack of men: in that case it was called *numerus collatus*. Its number varied, but was roughly about a hundred and consisted of elements taken from different camps or units according to the specific mission. Because of the small size of these units, it is presumed they were formed more to meet technical rather than wartime needs, specialists and experts is specific sectors. In some cases these formations became permanent.

Sopra: Monete con insegne legionarie. A fianco: Moneta di Vespasiano. Sotto: Corazze per la testa dei cavalli.

Above: Coins with legionnaire insignias. To side: Vespasian coin. Below: Cuirasses for the heads of horses.

The Cavalry

As mentioned previously, the Romans did not attribute much importance to the cavalry, and even less to the cavalry as an autonomous service during combat. The lack of stirrups and fittings for the horses also contributed to making mounted combat more of a personal ability. Because of the precarious equilibrium on horseback and the debatable grip of the horses' hoofs it was difficult to effect charges or pursuits. It is interesting to note that when Roman horsemen had to ascend even slight elevations, they dismounted from their horses and marched alongside, almost as an infantryman. However, with the military reforms proposed by Augustus, the cavalry acquired higher status. The *equites legionarii* reappeared and 120 entered the ranks of every legion. Their internal subdivision was determined according to the *turma*, the smallest tactical unit, composed of only thirty horsemen. Hadrian increased the traditional four *turmae* to 10, thus increasing the overall establishment of the cavalry to 300. But in this historical context also it is difficult to determine how the cavalry actually fought, even accepting that they did so in a systematic manner.

Previously we mentioned some funerary steles with bas-reliefs of horsemen spearing their enemy on the ground. Far from confirming that particular medieval tactic, the large number of such images actually indicates the opposite and may simply have had a hagiographic value. An ideal to

which to aspire, but that in reality was far from being practiced! Which seems to be confirmed in the predilection of Roman commanders for using the auxiliary cavalry, composed of persons ethnically trained to mounted combat using a spear and arch, activities impossible to imitate with identical skill. Of these the:"*best cavalry that was under Roman command around the end of the I c. A.D. was North African, especially the Mauritanian one. We do not know how large was this mounted formation that took part in the operations in Dacia during the reign of Trajan, but we do know that the Mauri under Lusius Quietus played a very significant role, first because their actions are illustrated in the bas reliefs of the Trajan Column, second because their particular military capabilities were exploited by Trajan in subsequent wars against the Parthi.*

Another consideration also confirms that they were capable of taking decisive action against their enemies: for the first time since the end of the Republic we have the certainty that the cavalry units, and not the legionnaire infantry, were used to play strategic and not simply tactical roles."[59]

The Wartime Navy of Augustus

We have already mentioned that prior to the advent of the Empire the Romans had for several centuries been concerned with warships and naval warfare. But they did not become a true naval power nor did they acquire any particular affinity for maritime strategy. Systematically, once the threat that had compelled them to navigate and to undertake combat at sea had disappeared, both auxiliary ships and warships were either abandoned or destroyed. For almost five centuries the Romans believed that ships were simply floating structures that made it possible to undertake battles at sea. In other words, they considered naval warfare simply as an extension of ground combat, a confrontation between men rather than means, as also believed by Mediterranean thalassocracies. According to this concept the role of ships was to allow legionnaires to undertake hand to hand combat with the enemy, but certainly not to develop its own tactics, ship against ship. Thus almost up to the battle of Actium, ships were not even equated to horses and were never considered a separate service. After that grandiose victory, perhaps because of the role played by the opposing fleets and the control of the sea by the opposing forces, there was a clear inversion of tendency.

The promoter of this new concept was Agrippa, the mythical artificer of the triumph of Augustus and his strong-willed right arm, in addition of course to being his best admiral and also his son-in-law! In detail:"*although historians do not tell when measures were taken that led to a stable and permanent organisation of the fleet one that we could call, in modern terms, the actual Roman Imperial Navy, what was accomplished during the principate of Augustus has the clear imprint of the organisational logic and naval competence of Marcus Agrippa. The general plan is doubtless his; the merit of the practical realization is to be attributed partly to him and partly to Augustus, who completed it ...*"[60]

Ricostruzioni di navi da guerra romane.
Reconstructions of Roman warships.
Nella pagina a fianco: busto di Agrippa.
Side page: bust of Agrippa.

It is paradoxical that Rome achieved the institution of a military navy when it had no more enemies at sea! Of course ships were useful to transport army contingents to sites where there were incipient revolts and rebellions, and their rapid intervention favoured the success of the repression. A task that over time became institutionalized and perfected to the point of becoming a primary function of what may justly be considered as the Roman navy: a powerful armed force of the Empire, capable of projecting to every corner of the sea within a few days! As to its size, the complement consisted two legions of what may be defined as marine or landing infantry rather than sea-borne troops. They were essentially rapid deployment units used for reinforcement operations under very critical circumstances and were called I and II *Audiutrix*. These two legions were later transferred and stationed elsewhere, probably after having been replaced by equivalent units. With the army concentrated along the *limes*, it was the seagoing soldiers who were responsible for protecting provisions, river patrols along the Rhine and the Danube, promoting trade and, not last, providing transportation for the emperor, as warships had proven to be the safest and most comfortable method of travel to reach any destination.

This last singular use also allows for an assessment of the subsequent operational criteria of the Roman navy. And explains the close contiguity of the Campanian bases, first Lucrino and then Miseno, with the Imperial palaces and villas of Baia and Capri. Nevertheless, what has been described does not in the least minimize its constant commitment to naval safety. A celebrated historian in this sector writes:"*one does not create a navy, an expensive and technical service to police the ground. The fact that a military unit, organized principally for wartime use in an external theatre, is occasionally used to re-establish internal order does not mean that it was instituted for this purpose, as its loyalty is not, a priori, more certain than that of the legions which are more suitable to such purpose. This regretfully confuses cause and effect. If it is true that the Roman navy was an instrument of personal power in the hands of some emperors, we strongly doubt that it was envisaged for this purpose, no more so, at least, than the legions of the limes, that played a primary role in the internal life of the Urbe but whose essential and fundamental mission was not to undertake coup d'etats. The intervention of the navy in the political life of the Empire was only occasional; the fleet had other more important functions to fulfil.*"[61]

Functions that for understandable reasons could not be those of an actual wartime navy, as there was no longer any enemy in the entire Mediterranean! The expansion of Roman dominion along its coastline was completed with the advent of the Empire. There followed a capillary control from the largest port to the smallest bay that did not allow even the remotest gorge in which to hide a boat to anyone who would dare challenge Rome's naval power! Soon the Medi-terranean became the central lake of an annular Empire and its finest means of communication. The most rapid as it was the most direct, the most

economical as it lacked any inclinations, the most reliable as lacking any weight limitations, the most advantageous as lacking any special conformation, on condi- tion however that it remain the safest, free of any form of piracy - a criminal phenomenon that had existed for millenniums, one of tested tactics and great profits, rooted in the mentality of many coastal ethnicities and along the irregular archipelagos. To uproot this parasitic criminality in a definitive manner had not been possible even for Rome, in spite of what was often triumphally proclaimed.

According to the most reliable Roman sources, piracy had been drastically routed in the final years of the Republic, and so with no enemies at sea, either regular or irregular, the fleet appeared to be of no use. This according to well know official historical statements that, though not actual political propaganda of the regime, do lead to some significant perplexities. Why keep so many men and so many ships for a task so marginal and discontinuous as the fight against piracy? If truly eliminated, why continue to have hundreds of ships, perfectly armed and equipped for confrontations at sea rather than a fleet of transport ships? What keels were these rostra to crush? Reality, as proven by more accurate and documented inquiries, was clearly different, because it was for the very reason of maintaining freedom of the seas and safety along the coasts that it became necessary to establish and train not one fleet but two! Everything seems to confirm that the plunderers were much more numerous, less disorganized and less remote that was claimed: insidious and vile raiders, certainly not worthy of the name enemy, but no less dangerous and obdurate!

Piracy was a form of organised crime that developed at the same time as navigation and that was never truly eliminated from the Mediterranean prior to the XIX century, but only contained and fought! This is confirmed by a curious corollary of its claimed extirpation in 67 B.C. by Pompeus Magnus: the very same person who only five years later proposed before the Senate the institution of a permanent fleet in order to make navigation in the Mediterranean safe - *ut in Italia navigaret*! And if that proposal did not

appear to be contradictory, it was only because everyone was perfectly aware that in no case could the elimination be considered definitive and irreversible! Obviously the request, as confirmed by Cicero, was not only promptly granted but also financed with the conspicuous sum of 4,300,000 sesterces, assigned to the *mare superum et inferum*, that is to the future areas of competence of the fleets of Miseno and Classe. Like all military allocations, however, the money could have been used to build new ships, to hire more men or for the construction of larger infrastructures, the navalia. This possibility, the most plausible, far from denying the preceding conclusion implicitly reinforces it: powerful naval bases that only in view of an active use could justify such colossal expenses. Which would backdate the genesis of the Classe base by about thirty years, the more so as the coasts of Illyria, Dalmatia and the Aegean were within its jurisdiction. A plethora of small bays, fjords and inlets pullulating with pirates whose virulence, despite the reiterated repressions, will ravage the central and eastern Mediterranean almost up to the contemporary era. Symbolic that the fastest Roman warship, the liburna, had been copied from the ship used by the most aggressive of the pirates, the *Liburni*!

Even though the Roman navy no longer had enemies at sea, it had to patrol it constantly to keep the pirates at bay. The sole presence of ships, whether simply cruising or escorting merchant ships, was sufficient to ensure free navigation. And Rome depended increasingly on the constant influx of provisions from the sea for its food: during the Imperial Era policing the seas became a priority task, both at sea and along its coasts, as the pirates reappeared a few years after every defeat. And though Augustus is credited with having liberated the seas of pirates, pacifying the entire Mediterranean, this was an ephemeral and precarious peace as sources continue to relay increasingly frequent episodes of piracy. This period must be considered as one of armed peace, of a security never permanently acquired, but earned by the constant presence at sea of the powerful Imperial navy.[62]

The Naval Base of Miseno

In order to discuss the role of the Roman navy from the beginning of the Imperial Era, especially its unceasing commitment to maintaining free navigation and secure coastlines, a digression regarding its bases and their characteristics is indispensable. Like the large legionnaire bases along the eastern *limes*, these were the largest and most complex infrastructures of the army. All Roman warships stationed in the different ports of the Mediterranean during the last quarter of the I c. B.C. were grouped into two fleets. Their respective naval bases were in Baia, Miseno and Classe, near Ravenna: the former had jurisdiction over the western basin up to Gibraltar, the second over the eastern basin, up to the Dardanelles. Although both were known, since the time of Domitian, as *Praetorian Fleet*, the Tyrrhenian one, which covered Rome and the major cities of the empire was pre-eminent. Consequently its commander may be considered as the original Chief of the Imperial Navy, obviously with all the limitations inherent to such a post.

Chronologically, a permanent navy was finally instituted during the reign of Augustus by Marcus Agrippa (63-12 B.C.), an experienced commander and highly skilled technician.[63] The first problem he had to solve was to find a location that was morphologically suited to be transformed into an ideal naval base. According to a proven archetype, similar to the one in Carthage [64] and that remained unchanged almost up to the XIX century, it had to have two interconnected basins, with the outermost and largest communicating directly with the sea. After a thorough search Agrippa's choice fell on the lacustrian complex of Lucrino-Averno, almost at the extremity of the peninsula of Miseno.

Observing a satellite image of the Gulf of Naples, the volcanic nature of its north-central area is immediately evident. An accumulation of ancient craters scattered through what resembles a lunar surface. Over time some of these became filled with water and were transformed into coastal lakes separated by narrow tongues

of sand from the open sea. Others partially collapsed, becoming protected inlets of moderate depth. Those that will become the ports of Lucrino and Miseno, are the primary craters, composed of clusters of lesser craters. Agrippa considered these two lakes, Lucrino and Averno, at the centre of the peninsula, to be the ideal site for his naval base. All that was required was to connect the two and then connect both with the sea , a not particularly difficult task as Lucrino, separated by a tongue of land from Averno, was almost beaten down by the waves. The works were rapidly concluded, transforming the strip of sand between Lucrino and the sea into a massive offshore dam. Around 37 B.C. the ships of the fleet thus had a safe harbour: the *Portus Iulius*.

Within a few decades, in truth not many since its completion, the *Portus Iulius* began to display the first symptoms of an irreversible loss of depth caused by sedimentation of the sand bottom. In spite of their modest draught, large warships could no longer manoeuvre with sufficient safety, thus in spite of its ideal loca-

tion and the functionality of its accessory structures and naval systems, the great complex had to be abandoned. It was at that time that they noted in the extreme section of the peninsula, just a few kilometres to the west, another group of flooded craters suitable to their purpose. Of these the first, already naturally open to the sea, was preceded by the inlet of Miseno: the most obvious difference with the Portus Julius was its size, as Miseno was much smaller. But this, notwithstanding the noticeable increase of the fleet, was not a serious deficiency as the criteria in the meantime had also changed. It was no longer necessary to have a large body of water to train crews, but only a good port with a sheltered anchorage for the ships, and sufficient space for the shipyards.[65] And Miseno had already been a good port many centuries prior, such that for the major classical historians the power of Cuma was attributable specifically to its naval value: the devastation caused by Hannibal in 214 B.C. indirectly confirms its importance. Since then, almost two centuries were required for that splendid peninsula to return to favour, covered with villas for the amusement of the Roman patricians. The port, however, never did return to its ancient fame as it was too far from the one in Naples, the principal economic centre and, paradoxically, too close to the port of Pozzuoli.

Riprese subacquee dei resti della base di Miseno. (ph. G.M.Ronga)
Underwater photographs of the ruins of the base of Miseno. (ph. G.M.Ronga)

Veduta satellitare dell'area di Lucrino.
Satellite view of Lucrino area.

The transformation of Miseno into the first naval base of the Empire drastically modified its characteristics, even from a legal perspective. Its surrounding areas were detached from Cuma to form an autonomous entity, a sort of extra-territorial enclave in which the new maritime colony found a home. A series of deductions, supported by a few archaeological relics, indicates that the colony was established by Agrippa along the southern shores of the port, where the city of the same name is today, with a series of buildings from Miniscola to the hill of *Misenum*. It is difficult to determine the date with any degree of accuracy but, by analogy with the founding of other colonies, it is presumed to be around 31 B.C., although a more recent date may be more plausible. In a few years the small centre became a dynamic and populated military city, home for numerous officers and sailors of the fleet with their respective families. From this aspect it anticipates the features of the modern American naval bases, also similar to autonomous cities in a foreign environment. The works of the new naval base of Miseno began around 15 B.C., certainly between the bat-

tle of Actium in 31 B.C. and the death of Agrippa in 12 B.C. During the same historical period they also began to build a second naval base near Ravenna. Almost nothing is left of these numerous constructions and activities and it is only in the name of the beach of Miniscola that we still preserve a memory of the *militum schola*, the training camp, or *schola armaturarum* mentioned in an epigraph of the IV century, found in the vicinity.[66] As incredible as it may seem, almost nothing is left not only of the base, a fact that may be attributed to its abandonment, but even of the city itself, the last news of which goes back to the X century. Rather than Saracen incursions, the principal contributing cause to its radical destruction may have been the bradycism to which the entire area was subject beginning with the dissolution of the Empire.

The Naval Base of Classe

At first glance it may appear to be a very cynical fate that the remains of the two major Imperial naval bases have been completely eradicated by the sea. Those of Miseno lie underneath its surface by ten or so meters and those of Classe about a kilometre from its shores! The explanation for the apparent paradox is simple: an ideal naval base must have a lacustrine interior basin and a secluded external bay: one to provide a safe harbour from storms at sea, the other a seasonal anchorage. A sort of tangent specus, an 8 shaped basin, geologic conformation as rare as it is precarious, resulting from the deterioration of volcanic or flooded sediments, geologic formations that are always unstable and ephemeral. Since the choice was based on the unquestionable military criterion of the *hinc et nuc*, this obvious encumbrance was not even taken into account and for almost three centuries those basins fulfilled their function, before disappearing.

From a chronological aspect the transformation of a section of Ravenna into a naval base dates to shortly after the battle of Actium, around 32 B.C. The great victorious fleet of Vipsanius Agrippa, further increased by what remained of Mark Antony's, was divided into two sections, one near Baia, the other in the vicinity of Ravenna. After confirming the suitability of each site, the technicians quickly adapted it to the multiple needs of a large military fleet by providing it with related infrastructures. In Classe they also built connecting canals, shipyards, beaching platforms, arsenals, depots, warehouses, wharfs and even a large lighthouse. Pliny mentioned the *Fossa Augusta*, the navigable canal that joined Classe and Ravenna at the mouth of the Po, and a large lighthouse similar, he claimed, to the one in Alexandria, Egypt.[67]

To attempt today to establish the layout of the city and the systems in the base of Classe is almost impossible because of the numerous political transformations that took place following the dissolution of the Western Empire. We also have no accurate information on when Ravenna began to be permanently part of the Roman state: the period of doubt extends from 295 to 170 B.C., more than a century, and seems to conclude in 49 B.C. with the granting of Roman citizenship. But even this date is not wholly reliable as it is assumed by analogy with the date that refers to Cisalpine Gaul, desired by Julius Caesar. Certainly it was Caesar who gave us a Ravenna similar to an ancient Venice. He wrote:"*(of the many) cities located among the swamps the largest is Ravenna, built entirely of wood and crossed by the water: one travels by means of bridges and by boat. At high tide, the city receives within it a large part of the sea.*"[68]

Apart from this suggestive lagoon-like city, what was Classe really like in the fullness of its activity? It appears to have been very similar to Miseno, a sort of autonomous enclave, multiethnic,

Nei recenti scavi condotti nell'area della base di Classe, sono riemerse le mura.
The walls unearthed during the recent excavations near the base of Classe.

swarming with men and activities, where many military were accompanied by just as many civilians indispensable to its administration. An accumulation of barracks, private residences, shipyards, taverns, brothels, shops and, in the background, hundreds of ships arriving and departing. Dockworkers on the wharfs, sailors on leave, artisans at work and everywhere, commerce and traffic. Since the average life span of an ancient ship does not seem to have exceeded a few decades, if supported by continuous maintenance, a fleet of a hundred or so warships, which seems to be the maximum number of the fleet in Classe, implied a significant public contribution. To start with, a military force of 9-10,000 men, to which had to be added at least 15-20,000 oarsmen; plus a host of woodcutters, wagon drivers, sawers, shipwrights, caulkers, rope-makers, metal workers, foundrymen and carpenters. And obviously public administrators, others tasked with water and road maintenance, priests and merchants. All with their respective families, at the time numerous: what was the most likely demographic entity for the *civitas Classis*? We would not be mistaken in placing it at around 40-50,000 inhabitants, for the most part coinciding with Miseno in the same era and that probably did not change much during the approximately three centuries that the base was in existence.

La struttura circolare riemersa durante i recenti scavi è probabilmente una torre della cinta muraria.
Circular structure unearthed during recent excavations, probably a tower from the defensive walls.

Notes

1 - For a summary of the events leading to the institution of the Roman Empire cf. H. A. FISHER, *Storia d'Europa*, Milan 1964, pp. 119-140.

2 - J.WACHER, *Il mondo di Roma imperiale,* Bari 1989, pp.70-78.

3 - On the Ptolemaic dynasty cf. E. M. FORSTER, *Alessandria d'Egitto,* Palermo 1996, pp.42 and foll.

4 - D. CARRO, *Classica.Storia della marina di Roma. Testimonianze dell'antichità*, sec. ed. supplement to the Maritime Review n° 12, Rome 1999, vol. VIII, pp. 152 and foll.

5 - On the dissuasive force of the military, forerunner of the policy of détente, cf. E.N. LUTTWAK, *La grande strategia dell'impero romano*, Milan 1981, pp.14-18.

6 - PLUTARCO, *Vita di Antonio,* in *Vite parallele*, Milan 1974, vol. III, pp. 206-224.

7 - D. CARRO, *Classica*..., cit., vol.VIII, pp. 169-172.

8 - F.RUSSO, F.RUSSO, *79 d.C. Rotta su Pompei. Indagine sulla scomparsa di un Ammiraglio*, Naples 2006, pp. 134-156.

9 - On the historical and military figure of Agrippa cf. D. CARRO, *Classica*..., cit., vol.VIII.

10 - For the methods used by the Romans to open hostilities cf. Y. GARLAN, *Guerra e società nel mondo antico*, Bologna 1985, pp. 43-46.

11 - C. O. AUGUSTO, *Res gestae Divi Augusti*, edited by L.Canali, Roma 1982. Il brano è citato da D. CARRO, *Classica*..., cit., vol.VIII, p. 159.

12 - J. F. C. FULLER, *Le battaglie decisive del mondo occidentale*, Rome 1988, vol. I, pp. 187-209.

13 - A. BERNARDI, M. A. LEVI, *Le origini di Roma,* in *La Storia*, Milan 2006, vol. III, pp. 676 and foll.

14 - A. BERNARDI, M. A. LEVI, *Le origini*..., cit., vol. III, p. 675.

15 - M. A. LEVI, *L'impero romano,* Torino 1967, vol. I, pp. 22-35.

16 - C. SUETONIUS TRANQUILLUS, *Nerone*, in *Le vite dei dodici Cesari*, translation by A.Vigevano, Milan 1973, bk VI, 34, vol. III, pp. 71-75.

17 - PLUTARCH, *Vita di Antonio*...,cit., 58, vol. III, pp. 207-208.

18 - The information is related by CASSIUS DIO, *Storia Romana (Books XLVIII-LI)*, by *Cassio Dione-Storia Romana,* trans. by A. Stroppa, Milan 1998. The phrase is from D. CARRO, *Classica*..., cit., vol.VIII, p. 165.

19 - M. A. LEVI, *L'impero...*, cit., vol. I, pp. 9-97.

20 - The winner was still called simply Octavius as the title of *Augustus* will only conferred by the Senate on 13 January 27 B.C., when he officially becomes *Imperator Caesar Divi filius Augustus*. Four years later he will also receive the *tribunicia potestas* and the lifelong rank of *imperium proconsulare.* His reign will be the longest in the entire history of imperial Rome, exceeding 44 anni, up to 23 A.D. Cf. M. A. LEVI, *L'impero...*, cit., vol. I, pp. 23-24.

21 - J. WACHER, *Il mondo di Roma...*, cit., p.100.

22 - S. A. VITTORE, *Liber de Caesaribus*, I, 1.

23 - Y. LE BOHEC, *L'esercito romano*, Urbino 2001, p. 244.

24 - E. N. LUTTWAK, *La grande strategia dell'impero romano, dal I al III secolo d.C.*, Milan 1981, p. 30.

25- J. WACHER, *Il mondo di Roma...*, cit., p.101.

26- A. BERNARDI, M. A. LEVI, *Le origini...*, cit., vol. III, p. 679.

27-C.MARCATO, co-author of the *Dizionario di toponomastica*, Milan 1996, reports under the section *Friuli*:"Historical region of northeast Italy coinciding with the provinces of Udine and Pordenone; historically this also included the territory of Portogruaro (now province of Venice) and the upper and middle basin of the Isonzo... The name is a contraction of *Forum Iulii* 'Julius' Forum' (probably from *gens Iulia* rather than Julius Caesar)..."

28- Y. LE BOHEC, *L'esercito romano*, Urbino 2001, p. 27-28.

29-Among the legionnaires taken prisoner in that defeat, some enrolled perhaps as mercenaries and sent to the eastern frontier of Sogdiana, were again taken prisoner but by the Chinese army of the Hang dynasty and deported to China. There they supposedly founded a city which they called Rome. Only a few succeeded in returning to the West.

30- M. SIMKINS, *L'esercito romano da Adriano a Costantino*, Madrid 1999, p. 19.

31- E. N. LUTTWAK, *La grande strategia...*, cit., p. 24.

32- E. N. LUTTWAK, *La grande strategia...*, cit., pp. 73-74.

33- A. M. CHUGG, *The lost tomb of Alexander the Great*, London 2004, pp.XXII-XXIV.

34- E. N. LUTTWAK, *La grande strategia...*, cit., p. 24.

35- Y. LE BOHEC, *L'esercito...*, cit., p. 21-22.

36- F. RUSSO, F. RUSSO, *Pompei: la tecnologia dimenticata*, Naples 2007, pp. 11-115.

37- M. SIMKINS, *L'esercito romano...*, cit. , pp. 33-34.

38-On the orthogonal system and its relationship with the Toman *castramentatio* cf. G. CULTRERA, *Architettura ippodamea*, Rome 1924, pp. 489 and foll. On its use in the modern era cf. L. BENEVOLO, *Storia dell'architettura del Rinascimento*, Bari 1973, pp. 484 and foll.

39- M.SIMKINS, *L'esercito romano...*, cit. , p. 29.

40- J. WACHER, *Il mondo di Roma...*, cit., p.103.

41- M. SIMKINS, *L'esercito romano...*, cit. , p. 32.

42- J.CARCOPINO, *La vita quotidiana a Roma*, Bari 1976, p. 27.

43-On the pump of Ctesibius cf. F.RUSSO, F.RUSSO, *La tecnologia...*, cit., pp. 208-211.

44- J. WACHER, *Il mondo di Roma...*, cit., p.113.

45- FLAVIO GIUSEPPE, *La guerra giudaica*, bk III, 4, 2 edited by G. Vitucci, Verona 1978, vol. I, p. 485.

46- FLAVIO GIUSEPPE, *La guerra...*, cit., vol. I, p. 647, note n° 4.

47-See cf. PLINY THE ELDERG, *Storia Naturale*, introduction by G. B. Conte, Torino 1982, vol. I, p. L:" the first Plinian writing…is a brief treatise on the military technology of the cavalry, the *De iaculatione equestri*."

48- J. WACHER, *Il mondo di Roma...*, cit., p.117.

49- M. SIMKINS, *L'esercito romano...*, cit. , p. 37.

50- G. CERBO, F. RUSSO, *Parole e pensieri. Raccolta di curiosità linguistico-militari*, Rome 2000, p. 130.

51- FLAVIUS JOSEPHUS, *La guerra...*, cit., bk III, 6,2, vol. I, p. 497-98. The first to use the eagle as a symbol of power was Ptolemy Soter, one of Alexander the Great's generals and progenitor of the Ptolemaic dynasty in Egypt, whose last descendant was Cleopatra.

52- J. WACHER, *Il mondo di Roma...*, cit., pp.104-105.

53- G. BRIZZI, *La guerra nell'Impero romano*, in *Archeo*, Rome 1989, n° 52, pp.48 and foll.

54- J. WACHER, *Il mondo di Roma...*, cit., p.107.

55- J. WACHER, *Il mondo di Roma...*, cit., p. 107.

56- J. WACHER, *Il mondo di Roma...*, cit., pp.107.

57- J. WACHER, *Il mondo di Roma...*, cit., p. 108.

58- M. SIMKINS, *L'esercito romano...*, cit. , p. 40.

59- A. M. LIBERATI, F. SILVERIO, *Legio. Storia dei soldati di Roma* , Rome 1992, p.23.

60- D. CARRO, *Classica...*, cit., vol.VIII, p. 235.

61- M. REDDE', *Mare nostrum. Les infrastructures, le dispositif et l'histoire de la marine militare sous l'empire romain*, Rome 1986, p. 324. Translation by A.

62-On the logic behind ancient and modern piracy cf. F. RUSSO, *Guerra di corsa*, Roma 1997, vol. I, *prefazione*. Also cf. P. GOSSE, *Storia della pirateria*, Bologna 1962, pp.11-19. Specifically, see cf. M. REDDE', *Mare nostrum...*, cit., p. 327. Translation by A.

63-D.CARRO, *Classica...*, cit., volume VIII, pp. 214 and foll. For an idea of the numerous initiatives, one example is the first map of the world as it was at the time, the basis for all subsequent maps, and the building of the Pantheon.

64-An interesting reconstruction of the port of Carthage is available from the Tunisian Ministry of Defence.*The Tunisian Army,* Tunis 1996, pp.17-33.

65- D. CARRO, *Classica...*, cit., vol.VIII, p. 236.

66- S. DE CARO, A. GRECO, *Campania*, Bari 1981, p. 67.

67- M. MAURO, (ed. by), *I porti antichi di Ravenna,* Ravenna 2005, pp. 25-45.

68- S. ANSELMI, *Ravenna capitale imperiale*, in *Adriatico: la storia, le storie*, Milan 2000, p. 62.

Part Four

The Rassegna of the Legions

L'area sotto il controllo di Roma nel 230 d.C.
The area controlled by Rome in 230 A.D.

The Legions of the Empire

The legion established by Augustus lasted for over one and a half century, without undergoing any significant changes: the only change was to make the first cohort of each unit a *miliaria*, that is, consisting of one thousand men. Because of its mobility and flexibility, the legion was rather like a social nucleus of Rome, stationed in the various critical areas of the Empire to defend and control them. The long periods required for the full integration of subjugated peoples meant that at least one of these large units had to remain permanently in the conquered territory. Which led to the transformation of the camp for long operations, the *castra hiberna*, into permanent bases, with brick rather than wood structures and permanent fortifications in lieu of field camps. Without getting into the specifics, this led to precise stationing of the twenty-five legions still in existence at the time, as the three lost in Teutoburger, the *XVII*, *XVIII* and *XIX*, were never reconstituted for reasons of superstition. These were their names:

LEGIO I
- *Legio I Germanica*
- *Legio I Adiutrix*
- *Legio I Italica*
- *Legio I Macriana liberatrix*
- *Legio I Minervia*
- *Legio I Parthica*

LEGIO II
- *Legio II Adiutrix*
- *Legio II Augusta*
- *Legio II Italica*
- *Legio II Parthica*
- *Legio II Traiana*

LEGIO III
- *Legio III Augusta*
- *Legio III Cyrenaica*
- *Legio III Gallica*
- *Legio III Italica*
- *Legio III Parthica*

LEGIO IIII
- *Legio IIII Macedonia*
- *Legio IIII Scythica*

LEGIO V
- *Legio V Alaudae*
- *Legio V Macedonica*

LEGIO VI
- *Legio VI Ferrata*
- *Legio VI Victrix*

LEGIO VII
- *Legio VII Claudia Pia Fidelis*
- *Legio VII Gemina*

LEGIO VIII
- *Legio VIII Augusta*

LEGIO VIIII
- *Legio VIIII Hispana*

LEGIO X
Legio X Fretensis
Legio X Equestris

LEGIO XI
Legio XI Claudia Pia Fidelis

LEGIO XII
Legio XII Fulminata

LEGIO XIII
Legio XIII Gemina

LEGIO XIIII
Legio XIIII Gemina Martia Victrix

LEGIO XV
Legio XV Apollinaris
Legio XV Primigenia

LEGIO XVI
Legio XVI Gallica

LEGIO XVII
Legio XVII

LEGIO XVIII
Legio XVIII

LEGIO XVIIII
Legio XVIIII

LEGIO XX
Legio XX Valeria Victrix

LEGIO XXI
Legio XXI Rapax

LEGIO XXII
Legio XXII Deiotoriana
Legio XXII Primigenia

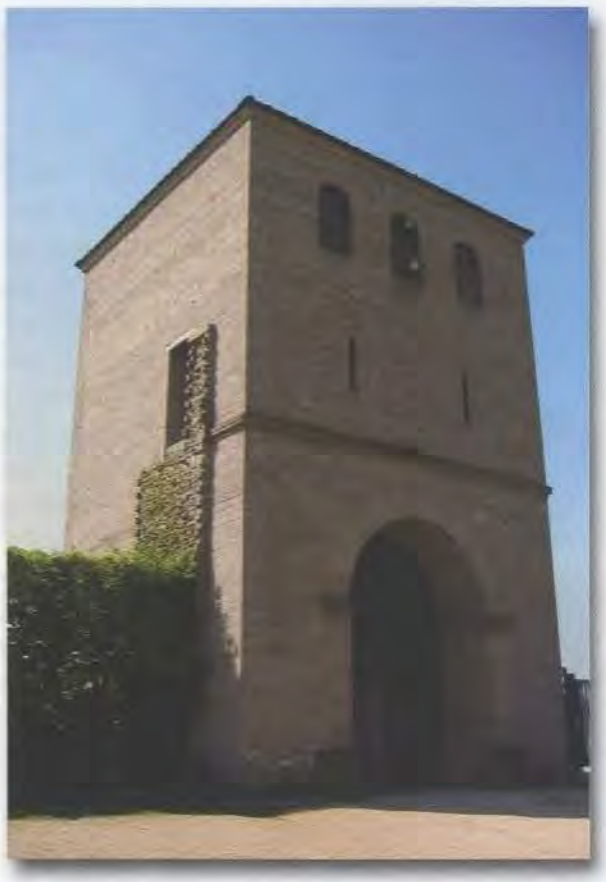
LEGIO XXX
Legio XXX Ulpia Victrix

Below, in extreme synthesis, the service status of each, reconstructed according to the sources available:

Legio I Germanica

This was one of the legions enrolled by Julius Caesar in 48 B.C. in view of the confrontation with Pompeus. It fought in the battle of Farsalo and was confirmed by Augustus. It was later transferred to Tarragonese Spain, where it fought against the Cantari, then again transferred to the Rhine border, during Drusus' campaigns against the Germans. During the tragic year of the *four emperors*, 69-70 [1], the *I Germanica* sided with Vitellius and fought in the battles around *Castra Vetere*, Xanten. In 70 A.D., after the revolt of the Batavians and consequent battles, the remains of the legion joined those of Galba's *Legio VII* in the *VII Gemina* stationed in Spain, where it was still operational in the V century. Its emblem was the bull.

In questa sezione verranno inserite monete e bolli laterizi delle legioni esaminate.
In questa sezione verranno inserite monete e bolli laterizi delle legioni esaminate.



Torre ricostruita nel campo di Castra Vetere, Xanten.
Tower reconstructed in the camp of Castra Vetere, Xanten.

Legio I Adiutrix

This legion was probably constituted by Galba, or directly by Nero in 68, using the soldiers of the Miseno fleet. In the year of the four emperors, the legion sided first with Galba and later with Otho in the first battle of Bedriacum. Transferred to *Mogontiacum*, Mainz, it shared the base with the *Legio XIII Gemina*: both units were used to build military structures . It later fought against the Germanic tribe of the *Chatti*, beyond the Rhine, under the command of Domitian. Together with the *Legio IIII Flavia Felix* and the *Legio XIII Gemina* it conquered Dacia and occupied the new province. For the support it provided Trajan on that occasion it was awarded the cognomen of *pia fidelis*. It remained on the Danube frontier and supported the ascent of Septimius Severus, following him to Rome. It then returned to Pannonia and took part in various campaigns against the Parthians. During the III century it was also awarded the cognomen of *pia fidelis bis* and *costans*. The final mention of this legion dates to 444 when it is still stationed in Brigetio, Szony in Hungary, in the province of Pannonia. Its emblem was the capricorn and Pegasus, the winged horse.

Legio I Italica

The legion was formed by Nero in 67 to undertake an expedition between Moesia and Armenia. It was an *élite* unit as its members were selected Italic recruits at least m 1.76 tall, an exceptional height for the era. With the end of the expedition, the *I Italica* was sent to Gaul, based in *Lugdunum*, Lyon. It supported Vitellius in 69-70 and fought for him in Bedriacum against the legions of Otho. Defeated by Vespasian in the second battle of Bedriacum it was sent to lower Moesia, to *Durostorum*, Silistra in Bulgaria. It later fought in the Dacian wars and took part in the conquest of Dacia under Trajan.[2] Hadrian then moved it to *Novae*, Svitov in Bulgaria, but it was later recalled by Septimius Severus for the war against the Parthians. Information on this legion stops in the IV century, when some of its detachments formed comitatensi legions while the rest formed a legion of frontier troops, stationed around *Novae*. Its emblems were a bull and a boar.

Ruderi del teatro romano di Lugdunum, odierna Lione.
Ruins of the Roman theatre in Lugdunum, modern day Lyon.

Legio I Macriana Liberatrix

This legion, whose *cognomen* refers to the liberation of Macer, was enrolled in Africa by the governor Lucius Clodius Macer in 68. One of its missions was the repression of a revolt against Nero, together with the *III Augusta*. The suicide of the Emperor in 69 also ended the legion as his successor, Galba, did not trust Macer and soon had him eliminated, simultaneously disbanding the unit. Their emblem is not known.

Legio I Minerva

This was one of the legions formed by Domitian, perhaps in 82 A.D., in expectation of the campaign against the Germanic tribe of the *Chatti*. The *cognomen* associates it with Minerva and its first headquarters was in

Bonna, today's Bonn, in lower Germany. In 89, it repressed a rebellion and earned the cognomen of *Pia Fidelis Domitiana*. With Trajan it fought the Dacians, under the command of the future Emperor Hadrian. Subsequently, the *I Minervia* was stationed in *Castra Vetere*, Xanten, modern Resensburg in Germany, with the *XXX Ulpia Victrix*. Some of its *vexillationes* participated in battles in different parts of the Empire. In 353 the Francs conquered the city of Bonn and from that time on there is no more mention of the *I Minervia*, though there is no certainty regarding its destruction. Its emblem was the goddess Minerva.

Legio I Parthica

The legion was formed in 197 by Septimius Severus with Syrian conscripts who had been enrolled in the army of Pescennio Negro and dispersed after his defeat in 194. It was stationed in Singara, Sinjar in Mesopotamia, together with the *III Parthica*, to deal with the threat of the *Parthi*. However, it did not succeed in repelling the Sassanian attack against its base, which was devastated. The legion was later transferred to Nisibis, in what is now Turkey, where it was still present in the V century. Its emblem was a centaur.

Legio II Adiutrix

This was a legion enrolled by Vespasian, in 70 A.D., with the soldiers of the Classe fleet so, at least originally, it should be considered as a marine infantry. Its first assignment was to repress the Batavian revolt of Civile, in lower Germany, under the command of Quintus Petillius Cerialis. The fortunate outcome of that operation led to its transfer to Britannia, where it remained for several years, most likely headquartered in Chester, to put down further rebellions. Beginning in 87 it participated in the Dacian wars with Domitian, with Hadrian as its military tribune. In the years following, it went to *Aquincum*, today's Budapest, where it participated in numerous campaigns in the following centuries. This legion is last mentioned on the Rhine border, at the beginning of the IV century. The *Notizia Dignitatum* [3] reports it was headquartered in *Aquincum*, although many of its detachments were scattered throughout the nearby province. Its emblem was the capricorn and the winged horse.

Legio II Augusta

The legion was formed in 43 B.C., by Octavius and by Consul Gaius Vibius Pansa Petronianus. We know that it fought in Philippi and in Perugia and was later transferred to Spain to take part in the Cantabrian wars, which conclusion definitively sanctioned the dominion of Rome. In the years immediately following it remained stationed on the Iberian Peninsula, until the catastrophe of Teutoburger forced its relocation to Germany, in the vicinity of Mainz, moving again in the year 17 to *Argentorate*, Strasburg. In 43 it participated in the invasion of Britannia where, at the order of the future emperor Vespasian, it fought the *Durotrigi* tribes. It was defeated in 52 and fought valorously against the rebel forces led by Queen Boadicea. It was then stationed in various British bases, including Glevum, Gloucester, *Isca Silurum*, today's Caerleon in Wales, and Alchester, Oxfordshire. It also contributed to the construction of the grandiose Hadrian's Wall: its presence in Britannia is still mentioned in the IV century. Its emblem was the capricorn.

Legio II Italica

This was one of the legions formed by Marcus Aurelius between 165 and 166 together with the *Legio III Italica*, during the wars against the Germans and the Parthians. As far as we know its first fortified base was in Celeja, the current *Celje* in Slovenia, where it was tasked with defending the northern and eastern territories of Italy. It was later transferred to the Danube *limes*, in Noricum, and its headquarters moved to *Albing*, Austria around 183. From here Commodus moved it to *Lauriacum*, the city of Enns in Austria, from which site it accompanied Septimius Severus to Rome in 193, to confirm his power. For this reason it earned the title of *Fidelis*, and fought against the Parthians. It was perhaps in this circumstance that it also earned the *cognomen* of *VII Pia VII Fidelis*, that is, *sevenfold faithful* and *loyal*. The final traces we have of this legion are in the V century in Noricum. Its emblem was the she-wolf with the twins Romulus and Remus.

Legio II Parthica

One of three legions with the same *cognomen*, formed by Septimius Severus in 197, in view of the war against the Parthians. The war was concluded brilliantly for Rome and the *II Parthica*, back in Italy, camped in the vicinity of the city, in the Castra Albani. This was an absolute novelty for the era, as no legion had been stationed in the peninsula for almost two centuries. A few architectural remains still exist of that encampment, including a large cistern [4], still in use, and almost the same size as the *Piscina Mirabilis* of Miseno.[5] It subsequently participated in the campaign in Britannia and fought both the Germans and the Parthians, under Caracalla. For a certain period it was in *Apamea*, Syria, before returning to its former encampment on the Albanian Hills in the III century. Because of its support to the Emperor Gallienus it earned the cognomina of *V Fidelis V Pia VI Fidelis VI Pia*. In the beginning of the IV century it was deployed along the limes of the Tigris, where in it was heavily defeated by the Sassanians in Singara, Mesopotamia, in the year 360. The last information we have is that it was stationed in *Cepha*, Turkey around 420. Its emblems were a bull and a centaur.

La grande cisterna dei Castra Albani.
The great cistern of the Castra Albani.

Legio II Traiana Fortis

The legion was enrolled by Trajan in 105 A.D., together with the *XXX Ulpia Victrix* for the Dacian campaigns. It later fought against the Parthians and, in 117, it was stationed in Judea to repress any attempts at insurrection. In 125 it was transferred to Egypt where it shared the base of *Nicopolis*, Alexandria, Egypt, with the *XXI Deiotariana*. The *II Traiana* participated in repressing numerous insurrections between 132 and 136, supporting the ascent to the throne in 194 of the rival of Septimius Severus, only to ally itself again at the last moment with Septimius. Around 213 it was with Caracalla in operations against various Germanic tribes, earning the *cognomen* of *Germanica*. The last mention we have dates to the V century, when it was reported to be in *Apollonopolis Magna*, in southern Egypt. Its emblem was Hercules.

Legio III Augusta

This was one of the legions formed in 43 B.C. by Octavius and was used mostly in North Africa. It probably took part in the battle of Philippi and after its victory remained under its founder, carrying out

Aerial view of the archaeological site of Lambaesis, modern Lambèse in Numidia, North Africa and remains of the pretorium on side page.

a brief mission in Sicily to repress the revolt incited by Sextus Pompeus. It was then stationed in Africa, perhaps in *Thevestis*, today's Tebessa in Algeria, where it helped to build civilian and military structures. It fought the Mauri and Numidians and one of its contingents was slaughtered, perhaps through the cowardice of fellow-soldiers: what is certain is that the entire unit was decimated, a highly serious and little used penalty, enacted only for the worst collective crimes, such as cowardice before the enemy. In 75 the *III Augusta* was transferred to a fortified camp in *Lambaesis*, Numidia, the modern Lambese in Algeria, where it remained for two centuries, fighting the Berbers. Some of its contingents also took part in the campaigns of Marcus Aurelius. In 193 Septimius Severus awarded it the *cognomen* of *Pia Vindex* for its loyalty in the course of the civil war following the death of Pertinax. In the beginning of the III century it suffered such heavy losses because of Berber attacks as to require reinforcement from the *III Gallica*, which was disbanded in those same years. After suppressing the revolt of Gordoniano I and Gordoniano II in 238, it was disbanded by Gordoniano III who also annulled its memory. It was reconstituted in 252 by the emperor Valerian, who readmitted its remaining legionnaires now stationed in Rhaetia and in Noricum, and was repositioned in its historical base. On that occasion it also received the *cognomen* of *iterum Pia iterum Vindex*, that is, newly faithful and avenging. Between the end of the IV and the beginning of the V century all traces of the legion are lost. Its emblem was the winged horse Pegasus and the capricorn.

Legio III Cyrenaica

This was certainly one of the legions enrolled by Mark Antony in 36 B.C., while he was governor of Cyrenaica. However, it only made its debut during Octavius' war to conquer Egypt in 30 B.C., where it remained stationed for at least the following five years. It was later based in Alexandria, together with the *XXI Deiotariana*, tasked with local pacification. In the following centuries it took part, either as a whole or through its various detachments, in many campaigns in every corner of the Empire. Transferred to an unknown location in the III century, it is mentioned for the last time at the beginning of the V century in the vicinity of *Bostra*, in Syria. Its descendants, which number is difficult to quantify, were destroyed by the Arabs in 634.

Legio III Gallica

This is one of the legions formed by Julius Caesar around 49 B.C., probably in view of a civil war. From its *cognomen Gallica* we can deduce the Gallic origin of its legionnaires, perhaps taken from Gallia Narbonense. The unit fought in Farsalo and upon the death of Caesar, it became part of Antony's army and was used in his Parthian campaign. Though deployed against Octavius, it surrendered to him in Perugia in 41 B.C. and after the victory of Actium, the *III Gallica* remained in his army. It again fought the Parthians and was later stationed in Moesia along the Danube, where in 69 it succeeded first in resisting and then stopping an incursion of Roxolian Sarmatians. Shortly after it fought in Bedriacum for Ves-

pasian: it was during these years that Pliny Celius the Second served within its ranks as *tribunus militum*.[6] The *III Gallica* later went to Syria to take part in the repression of the Judaic revolt. It was then stationed in *Raphanea*, also in Syria, while one of its detachments was sent to Traconitide, near Lake Tiberias. Transferred in the beginning of the III century to the new province of *Syria Phoenice*, in 218 it contributed to the acclamation of Elagabalus, only 14 years of age, as emperor. Its unruliness, resulting in the revolt of 219, forced the young sovereign to disband it: its name was erased from the monuments and some of its legionnaires transferred to the *III Augusta*. Alexander Severus re-established it, leaving it in Syria, near Damascus, to preside over the road to Palmyra. The last news we have of the *III Gallica* dates to 323 when it is reported still operational in Syria. Its emblem was two bulls pulling a cart with the standard of the legion.

Ruins of Ctesiphon in a photograph of 1932. Side page aerial view of the archaeological site of Palmyra

Legio III Italica

The legion was formed by Marcus Aurelius around 165 A.D., for his campaign against the Marcomanni and also because of the increasing pressure of the barbarians. Its *cognomen* indicates the Italic origin of its conscripts. Stationed to the Danubian provinces together with the *II Italica* and the *I Adiutrix*, it repelled the invasions of the Marcomanni. In 172 it was stationed in Eining, in a temporary base formerly occupied by auxiliary troops, while awaiting the completion of the base of *Castra Vetere*, Xanten near Regensburg. Other sources place it in the fortress of *Reginum*, in Rhaetia, later called Castra Regina, the modern day Regensburg. In 193 it sided with Septimius Severus and in 213 fought the Germans under Caracalla. During the III century it supported the emperor Gallienus against his rival Postumus, earning the *cognomen VI Pia VI Fidelis* and *VII Pia VII Fidelis*. Though remaining in its base at Regensburg, it took part in the war of 273 conducted by Aurelian against Queen Zenobia. The last news we have is from the end of the IV century when it was still on the Danube. Its emblem was a stork.

Legio III Parthica

This was one of the three legions formed in 197 by Septimius Severus for his war against the Parthians, thus its *cognomen*. Together with the *I Parthica* and the *II Parthica*, it was intended to unelash a violent attack along the eastern border of the Empire. The majority of its conscripts were Syrians, formerly enrolled in the army of Pescennius Niger. The outcome of the campaign was positive and led to the conquest of Ctesiphon. The *III Parthica*, however, remained in the Mesopotamian region,

in the base of Resena, to protect the roads from attacks by Sassanians and fought them frequently in the course of the III century. One of their counterattacks in 230 forced the legion to retreat, but it recovered its previous position a few years later. It also fought in the victorious battle of Resena, around 243. In the beginning of the V century the *III Parthica* was still operational in the same regions. Its emblem was a bull.

Legio IIII Macedonica

Formed by Julius Caesar in 48 B.C., for the war against Pompeus, its conscripts were taken from Italy. It made is debut in the same year in *Durrhachium*, Durazzo, and in Farsalo where Pompeus was defeated. At the conclusion of the war the *Legio IIII* was sent to Macedonia, from which it took its *cognomen*. Octavius used it in the battle of Philippi in 42 B.C. and in the battle of Actium in 31 B.C. In the following re-organisation, the *IIII Macedonica* was sent to Terraconese Spain, where it remained until the end of the battles. In 43 it took part in the conquest of Britannia and was later transferred to the camp of the *XIIII Gemina*. In 69 it fought alongside Vitellius and was defeated in the second battle of Bedriacum by Vespasian, who disbanded the legion shortly after becoming emperor. It was reconstituted with the name of *Legio IIII Flavia Felix*. Its emblems were a bull and a capricorn.

Legio IIII Scythica

This legion was enrolled by Mark Antony for his campaigns against the Parthians, from whom it took its cognomen. There is no information on its original posting but we do know that, following the victory of Actium, Augustus transferred it to Moesia. Its primary tasks were the construction of new roads and maintenance of existing ones. The future emperor Vespasian served in its ranks. Under Corbulo it fought the Parthians in Armenia and in the year 62 under the command of the governor of Cappadocia, Lucius Caesennius Paetus, this legion and the *XII Fulminata* suffered a humiliating defeat in Rhandeia and was forced to surrender. It was transferred dishonourably to Zeugma, on the right bank of the Euphrates, in Turkey, where it remained for more than a century. In spite of the fact that it supported Vespasian in 69, it did not receive any significant assignment, as it was considered a unit of lesser calibre. It was also defeated by the Hebrews in revolt, but redeemed itself in subsequent victorious campaigns against the Parthians. All references to this legion cease in 219, but reappear at the beginning of the V century, when the legion is reported to be in Syria. Its emblem was a capricorn.

Legio V Alaudae

This legion also was formed by Julius Caesar in 52 B.C. and is also known as the *Gallica* because its conscripts were from Gaul. It strange *cognomen*, *Alaudae*, that is larks, probably alludes to the plumed crests worn by its warriors. Although it was not originally a true legion of the Republic, it was later recognised as such and consequently maintained by the Senate. It participated in the Gallic wars, after

which it was stationed in Spain around 49 B.C. It fought for Mark Antony between 41 and 31 B.C. and may have taken part in the battle of Actium: upon Antony's death it became part of the army of Augustus. There is no certain information regarding its end, which very probably occurred during the Batavian revolt in the year 70. Its emblem was an elephant.

Legio V Macedonica

The legion was enrolled by the Consul Gaius Vibius Pansa Petroniano and by Octavius in 43 B.C., in view of the confrontation with Caesar's assassins. It appears to have participated in the battle of Actium and was part of the twenty-eight legions maintained by Augustus. It was sent to Macedonia, thus its *cognomen*, but remained there only a few years. It then fought the Parthians in Armenia, with the *III Gallica*, the *VI Ferrata* and the *X Fretensis*, under Corbulo. Under Vespasian, who was not yet emperor, it took part in the repression of the Judaic rebellion in 66, distinguishing itself with valour. During the tragic year of 69 the *V Macedonica* remained stationed in Emmaus, where it passed under the command of Titus, son of Vespasian, when the latter became emperor. At the end of the Judaic war the legion returned to Moesia and in the following years numbered among its *tribunum militum*, the future emperor Publius Aelius Traianus Hadrianus. At the beginning of the II century the V Macedonica was relocated to Dacia, where it took part in Trajan's campaigns against the local barbarians. From 107 it remained stationed in *Troesimus*, near the mouth of the Danube. It intervened only in the initial phases of the campaign against the Parthians in 161 before returning to *Potassa*, today Turda, Romania. With Marcus Aurelius it fought successfully against the Marcomanni, the Sarmatians and the Quadi. In 185-87 it defeated a Dacian army, thus the *cognomen Pia Costans*. Without changing its base it participated in other campaigns and earned other honours and other titles. It returned to Oescus in 274 remaining to defend the province. It disappeared in 636 during the battle of Yarmuk, a tributary of the Jordan near the Golan Heights, against the Arabs.

Legio VI Ferrata

This was one of the legions formed by Julius Caesar in Cisaslpine Gaul, around 53 B.C. In 47 B.C. it fought in the battle of *Zela*, today Zile, Turkey, and then against Pompey's soldiers in Spain. It then sided with Mark Antony, although in the end it ended up in Augustus'army, based in Syria. With Corbulo in Armenia it fought the Parthians and with the *XIII Fulminata*, from 58 on it participated in the war against the Judeans. It was then sent to Moesia where it succeeded in re-establishing the peace that had been compromised by the attacks of the Dacians. Upon its return to base in 73, it participated in the invasion of Commagene, a small Hellenistic kingdom, formerly a satrapy of the Persian empire prior to the conquest of Alexander the Great, when it became an integral part of *Syria*. With Hadrian it marched

Gerusalemme: scorcio del Muro del Pianto.
Jerusalem: section of the Wailing Wall.

against the Parthians, conquering the new province of Arabia Nabataea in 105, located between the Jordan River and the Dead Sea. Shortly thereafter it was stationed to Palestine, to take part in the second Judaic War that, upon conclusion in 138 sanctioned the irreversible destruction of the Temple of Jerusalem. Under Septimius Severus, it received the *cognomen* of *Fidelis Constans*. Its traces are lost in the III century, perhaps following its dissolution. Its emblem is not known.

Legio VI Victrix

This was one of the legions formed by Octavius in 41 B.C., and is considered the twin of the *IV Ferrata*. It is believed to have included among its ranks some of the veterans of Julius Caesar and members of the *VI Ferrata*. It first appeared during the siege of Perugia in 41, then fought against Sextus Pompeus to restore grain supplies from Sicily. Still with Octavius it fought in Actium and was then assigned to Tarragonese Spain where it remained for approximately one century, after which it was transferred to *Castra Vetere* during Nero's reign. In that base, it acclaimed Galba as emperor in place of Nero. In 119 Hadrian stationed it in Britannia and, from 122, it took active part in the construction of his celebrated Wall. In 142, perhaps because of the experience it had acquired, it also participated in the construction of the Wall of Antonino, subsequently abandoned. A few sources report its presence still on the Island in the IV century. Its emblem was a bull, or perhaps Venus.

Legio VII Claudia Pia Fidelis

This legion also was formed by Julius Caesar around 58 B.C., probably in expectation of the Gallic Wars. It took part with Octavius in the battle of Philippi and in the subsequent confrontations in Italy in 40 B.C., against Antony's partisans. It was then stationed to the province of Illyria where in 42, it earned the title of *Pia Fidelis* for having prevented the attempted insurrection of the governor of Dalmatia, F. Camillus Scriboniano. Nero may have transferred the *VII Claudia* to Moesia and, after his suicide, it sided with Otho, sending 2000 legionnaires to Italy in his support. It is almost certain that they did not arrive in time to participate directly in the battles and, when they learned of the insurrection of other eastern legions, they allied with Vespasian. When the crisis of the four emperors was over, the *VII Claudia* was stationed to Germany and then again to Moesia, based in *Viminacium*, Kostolac in the former Yugoslavia. The last information we have places it in the same area around the IV century. Its emblem was a bull.

Legio VII Gemina

It was formed in 69 by Galba, at the time governor of Tarragonese Spain, to march on Rome and was thus known as *Galbiana* or *Hispanica*, but as its founder soon died it sided with Otho but without taking active part in combat. It then joined Vespasian and went to Italy, perhaps only with a delegation: it rebelled for the first time in Padova and again during the siege of Verona, thus confirming its total unreliability. After the defeat of Otho, it was assigned to Pannonia and thus completed its *cognomen* when it was joined by the remaining legionnaires of the *I Germanica*. Between 70 and 79 it

Destructive effects of mining technology called "Ruina montium" implemented under the control of the VII Gemina.

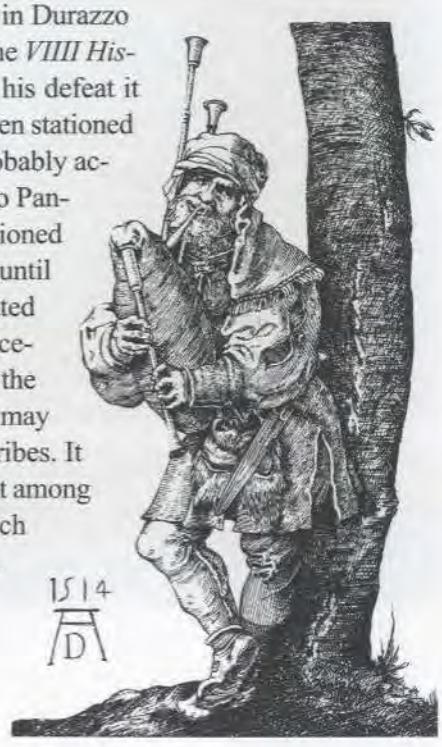
returned to Spain, based in *Legio*, Leòn. Subsequently its vexillationes took part in the campaigns in Britannia under Hadrian and in Africa, under Antonino. When it displayed its support, though after some hesitation, of Septimius Severus it was given the title *Pia Fidelis*, and its headquarters confirmed in Spain, where it was still operational in the V century. Its emblem is not known.

Legio VIII Augusta

Founded probably by Julius Caesar in 59 B.C., it participated in the Gallic campaign of the following year. Still with Caesar it crossed the Rubicon, fighting in *Corfinum* and in Brindisi, remaining in Apulia. It fought again in Durazzo and then in Farsalo in 48, in 43 in Modena against the ships of Mark Antony and, in 42, in Philippi against the plotters, then in Perugia and finally at Actium in 31 B.C. With Augustus sent the VIII legion, still called Gallica, to Tunisia and then to the Balkans where its victories earned it the *cognomen* of *Augusta*, around 10 B.C. It participated in the conquest of Britannia and around 45 it was assigned to Moesia, perhaps to *Novae*, today's Svistov in Bulgaria. It came to Italy to support Otho in 69, but it almost certainly did not take part in the first battle of Bedriacum: shortly thereafter, however, it sided with Vespasian for whom it fought in the second battle of Bedriacum. In the following decades it was stationed in *Argentoratum*, today's Strasburg, but moved frequently to take part in numerous battles. Except for a brief mission in North Africa to repress the revolt of Tacfarina, the *VIII Augusta* remained in Pannonia, perhaps based in *Poetovio*, today's Pettau in Slovenia. Sources claim it was still there in the beginning of the V century. Its emblem was a bull.

Legio VIIII Hispana

This legion also was probably enrolled by Julius Caesar in 58 B.C. in view of the Gallic campaign. It remained loyal to Caesar during the civil war, fighting against Pompey, then in Durazzo and Farsalo and the war in Africa in 46 B.C. After the death of the dictator, the *VIIII Hispana* remained with Octavius and fought Sextus Pompeus in Sicily. Upon his defeat it went to Macedonia where it soon had to confront Antony in Actium. It was then stationed to Spain where it took part in the Cantabrian wars of 25-13 B.C., when it probably acquired its *cognomen*. The defeat of Teutoburger led to the legion's transfer to Pannonia, in *Siscia*, today's Sisak, in the eastern region of the Rhine. It was stationed briefly in North Africa, before being sent to the Danube where it remained until its departure for the conquest of Britannia, under Aulus Plautius. It was defeated in 60-61 by the forces of Queen *Boudica*, to the point of requiring reinforcements from Germany. Sources provide the final references at the beginning of the II century, when they write of the legion's building a fortress in York. In 117 it may have taken part in the repression of an insurrection among the Caledonian tribes. It was destroyed probably under Marcus Aurelius: a curious mention reports that among its ranks were numerous players of the "zampogna", *utriculum*, from which probably derive the Scottish bagpipes! Their emblem may have been a bull.



Nei ranghi della VIIII Hispana c'erano numerosi utriculum, suonatori di zampogna.
The VIIII Hispana had numerous utriculum, or bagpipe players.

Legio X Fretensis

This legion also was formed by Octavius in 41-40 B.C. in view of the civil war. Its number was inspired by the mythical *X Legio* of Caesar: it fought in 36 B.C. against Sextus Pompeus in Nauloco, near Messina. Its cognomen is linked to this episode which refers to the maritime district. It also fought in Actium against Mark Antony, an operation that explains the trireme as its emblem. It was then stationed in Judea, and Syria in the year 6, together with the *III Gallica*, the *VI Ferrata* and the *XII Fulminata*. It also repressed the revolt of Herod Archelaus and, under Nero, it fought in the Parthian wars. It played a fundamental role in the Judaic war of 66-73, under the command of the future emperor Vespasian. A command that, after he ascended to the throne, passed to his son Titus, who conquered first Gamala and Taricace, later moving his base to Jericho. The revolt was suppressed in the year 70, except in Jerusalem and Masada. The *V Macedonia*, the *X Fulminata* and the *XV Apollinaris* then laid siege to Jerusalem, the latter legion camping on the Mount of Olives and distinguishing itself for its murderous artillery. This siege ended in 71 and in 72 they attacked Masada. This particular battle ended with the suicide of all its defenders, after Flavius Silva succeeded in building a large attack ramp. In the second Judaic revolt that broke out in 132, after ferocious fighting the *X Fretensis* reconquered Jerusalem. Between 208 and 211 some of its detachments moved into Britannia to fight the Caledonians. In 268, perhaps because of its repression of a revolt, it earned the *cognomen* of *Pia Fidelis*, and was stationed, between the end of the III century and the beginning of the IV, to *Aila*, Eilat in Israel, on the Red Sea. Any reference to the legion ceases around the middle of the IV century. Its emblem was a trireme and a bull.

Nella pagina a fianco un campo legionario di Masada; sopra i ruderi della città di Gamala, conquistata nel 68; in basso la veduta aerea del'Herodion altra fortezza ebrea coninvolta nell'insurrezione del 68.

Side page a legionnaire camp in Masada; above the ruins of the city of Gamla, conquered in 68; below, aerial view of the Herodion, another Hebrew fortress involve din the insurrection of 68.

Legio X Equestris

This was one of the legions used by Julius Caesar for the conquest of Gaul in 58 B.C. It fought with such valour that he selected some of its contingents as his personal mounted bodyguards, thus the cognomen of the unit. After his death the legion was reconstituted by Lepidus and fought for the triumvir up to the battle of Philippi. It then allied with Mark Antony, first in Armenia to fight the Parthians and then against Octavius. Shortly after the defeat of Actium, perhaps aware of its merits, Augustus kept it in his army but, when the legion rebelled it was divested of its *cognomen equestris* and absorbed by the *Legio X Gemina*.

Legio XI Claudia Pia Fidelis

This legion also was originally enrolled by Julius Caesar in 58 B.C. together with the XII, for the war against the Helvetians. The *XI Claudia* almost certainly took part also in the siege of Alesia, and then fought against Pompeus in Durazzo and Farsalo. The legion was later disbanded and its veterans sent to the territory of Bojano, Campobasso, leading to the emergence of the *Bovianum Undecumanorum*. Octavius re-established the unit in 42 B.C. and used it in the battles of Philippi and Actium, after which the *XI Claudia* was sent to the Balkans and, immediately after Teutoburger, to *Burnus*, today's Chistagne in Dalmatia, sharing a base with the *VII Paterna*. After repressing a rebellion during the reign of Claudius, it was awarded the title of *Pia Fidelis*. During the year of the four emperors it split, with one part of the legion siding with Otho and the other with Vespasian. When the crisis was over it reunited and after a series of modest campaigns, in 74 it was stationed in *Vindonissa*, today's Windisch in Switzerland, at the time upper Germany. There followed other battles against the Chatti and then another transfer, in 101, to *Brigetio*, today's Szony in Hungary, at the time lower Pannonia. It participated in Trajan's Dacian wars and in 114 it was transferred to lower Moesia. It sided with Septimius Severus and perhaps took part in the conquest of Ctesiphon. Some of its repressive interventions at the time of the Emperor Gallieno, earned it additional recognitions. During the V century it was deployed along the Danube. Its emblem may have been a bull or Neptune or even the twins fed by the she-wolf.

The ruins of Vindonissa, modern Windisch in Switzerland.

Side page: the theatre of Pietrabbondante, near Bovianum, today's Bojano, province of Campobasso.

Legio XII Fulminata

Enrolled by Julius Caesar in 58 B.C. for the campaign against the Helvetians, in addition to numerous small encounters, it also took part in the siege of Alesia. It was with Caesar in the battle of Farsalo and after its victory was given the *cognomen* of *Victrix* in 45 B.C. Its veterans were settled in the vicinity of

Parma. It was reconstituted in 44 B.C. by Lepidus and acquired by Mark Antony, for whom it probably fought in Modena against Octavius, and again in Philippi, against Caesar's assassins. Taken on by Augustus it was stationed in *Raphana*, in Syria, but suffered a dishonourable defeat in the battle of *Rhandeia*, in Cappadocia, in the year 62-63. In 66 it attempted to recover its compromised dignity during the first Judaic war, but because of its weak combat capability, it was returned to base and during its re-entry march, was ambushed, losing its aquilae in addition to 5,000 legionnaires and 380 horsemen! It later redeemed itself in the final phase of the Judaic war. Later it supported Titus Flavius Vespasian in his ascent to the Imperial throne and was assigned by him to Melitene, today's Malata, in Turkey, where it was charged with defending the frontier along the Euphrates. In 75 it was once again in the Caucasus, sent there by Domitian, and in 114 in Armenia with Trajan. Marcus Aurelius brought it with him in the campaign against the Quadi, during the Marcomannic wars. Later it received the *cognomen* of *Certa Constans* awarded by the same emperor as a recognition for not having rebelled during the revolt of Avidius Cassius. Although we have very little actual information, it probably remained in the Mesopotamian area, participating in all subsequent battles. It is certain that in the beginning of the V century it was still in Melitene. Its emblem was the lightning bolt.

Ruderi di Raphana, Decapolis, nel nord della Giordania.
Ruins of Raphana, Decapolis, in northern Jordan.

Legio XIII Gemina

Historically, this is one of the most celebrated legions. Formed by Julius Caesar in 57 B.C. it participated in the Gallic campaigns and, perhaps, also the siege of Alesia. It was the first legion to cross the Rubicon in January of 49, initiating the war against the faction of the optimates. It then fought against Pompeus, fighting from Durazzo to Farsalo. Recalled in 46 it participated in the battle of Tapso and then of Munda in 45, after which it was disbanded by Caesar who recompensed its veterans with agricultural grants. In 41 B.C. Octavius reconstituted it to stop the rebellion of Sextus Pompeus in Sicily. It acquired the *cognomen* of *Gemina* after the battle of Actium, when it was reintegrated with the survivors of other legions. It was sent by Augustus to Croatia and in 16 was transferred to *Emona*, today's Ljubjiana, in Pannonia, where it repressed local rebellions. After Teutoburger it was transferred to *Vindonissa*, in upper Germany, to deal with any Germanic attacks. Claudius moved it again to Pannonia around 45. In 69 it sided first with Otho and then with Vitellius, both defeated: according to tradition after its legionnaires surrendered they were forced to build the amphitheatres of Cremona and Bologna, before being once again sent to Pannonia. In the subsequent crisis it sided with Vespasian and took part in the sacking of Cremona, only to then be sent immediately after to Gaul, and to then return finally to the base of Vindobona, today's Vienna. From that time on it fought frequently along the Danube limes and Domitian stationed it in Dacia, at *Apulum*, *Alba Iulia* in Romania, to preside over the region. When it became necessary to evacuate the region, the *XIII Gemina* repositioned itself in the *Dacia Aureliana*. Many of its vexillationes participated in numerous subsequent campaigns: according to reliable sources in the V century the majority of the legion was still stationed in a fortress in Babylon, along the Nile. Its emblem was a lion.

Legio XIII Gemina Martia Victrix

Londra, statua in onore della regina Budicca, 1905.
London, statue in honour of Queen Boudica, 1905.

This was one of the legions founded by Octavius in 41 B.C., perhaps by uniting two legions. If so, most of its members would have come from Caesar's *Legio XIIII* which fought in Alesia, thus its identifying number. As for its cognomen, it was added by Nero after its victory over Boudica. In 43 it participated in the invasion of Britannia and in the war against Queen *Boudica*, ending in 60-61. In 68 it was stationed in *Gaul Narbonensis*. It also took part in a quickly suppressed rebellion in the year 89 and in the year 92 the legion was sent to Pannonia and made its base in Vindobona, Vienna. It then passed to *Carnutum*, today Petronell, Austria, location of the largest base of the fluvial fleet of the Danube, where it probably remained for the following three centuries. After several operations, mostly of a political nature, there is reference to the *XIIII Gemina* at the beginning of the V century in *Carnutum*. The legion may have been disbanded in the year immediately following, along with the fall of the entire Danube frontier. Its emblem was the capricorn.

Legio XV Apollinaris

This legion was almost certainly formed by Julius Caesar around 58 B.C. The *Legio XV* was destroyed or greatly weakened in Africa in 49 B.C. In 40-41 B.C., Octavius reformed it or perhaps created a completely new one with the same number, to fight Sextus Pompeus in Sicily. After the battle of Actium, the *XV Apollinaris* was sent to Illyria, where in the year 6 it participated, together with Tiberius Claudius Nero, in the campaign against Marbod, not however without having first suppressed a revolt in the Bohemian region. It was then transferred to *Poetovio*, Pettau in Slovenia. In 50 it moved to *Carnuntum* where it remained until 63, when it was stationed to Alexandria, Egypt and then Judea between 63 and 70, participating in the first Judaic war. It is believed that it had camps both in Antioch and in Jerusalem, where it contributed to the siege under the command of Titus. After returning to *Carnuntum* at the end of the war, it fought, under Domitian, along the Danube frontier, against the Parthians in 114 with Trajan and was then stationed permanently in Cappadocia in 118. Some of its vexillationes participated in the operations of Marcus Aurelius, who to thank them for their loyalty in repressing an attempt to usurp his throne, awarded them the title of *Constans Pia Fidelis*. The final mention of this legion dates to the V century in Satala, Cappadocia, today's Sadagh in Armenia, and *Ancyra*, Ankara. Their emblem is not known but as its *cognomen* means faithful to Apollo, he may have been its emblem.

Legio XV Primigenia

The legion was formed by the Emperor Caligula in 39, and dedicated, as indicated by its cognomen, to Fortune. In reality, this unit had very little fortune as it survived for barely thirty years! Enrolled for Caligula's Germanic campaign it fought in Wiesbaden, not far from Mainz where, when the battles were over, Caligula stationed it together with the *XIIII Gemina*. After 43 it moved to the base of *Castra Vetere*, together with the V Alaudae replacing the *XXI Rapax*. In 47 it took part in the offensive of Corbulo against the Chatti, an operation that was tactically victorious but strategically sterile, as the vast territory conquered was indefensible. On that occasion, the *XV Primigenia* undertook the construction of a canal, that still exists, between *Matilo*, Leida, and *Municipium Cananefatium*, Voorburg. It supported Vitellius in 69, but when the Batavian revolt broke out it was defeated in battle together with the V *Alaudae* and, after a brief siege in *Castra Vetere*, both surrendered in the year 70. Two legions sent to help them were also defeated, before Vespasian managed to repress the revolt. Neither the *XV Primigenia* nor the *V Alaudae* were reformed. Its emblem is unknown but could have been an image of the goddess Fortune.

Legio XVI Gallica

This legion was formed during the era of the triumvirs and so, at least initially, it had no *cognomen*. In 40-41 B.C. it was enrolled by Octavius, according to some scholars, and probably after the victory of Actium stationed in Mainz. From there it was transferred to *Novaesium*, today's Neuss in lower Germany around the year 43 to replace the *XX Valeria Victrix*, which was sent to Britannia. In 69-70 it followed Vitellius, when the Batavian revolt broke out. Some of the legion's units that had remained in the area surrendered and relinquished their aquila. After restoring order, Vespasian disbanded it that same year. Its emblem may have been a lion.

Legio XVII

There is very little information on this unfortunate legion. All that is known is that in the year 9 it was slaughtered in Teutoburger during a transfer under the command of Varus. To ward off bad luck it was not reconstituted.

Legio XVIII

No data available for this legion either, also destroyed along with the previous one in Teutoburger and no longer reconstituted.

Legio XVIIII

The third legion to be involved in the massacre of Teutoburger was the *XVIIII*, also never reconstituted. Its aquila was found and retrieved

six years later, during Germanicus' campaign to reaffirm the sovereignty of Rome in those areas, near the site of a tribe of Bructeri. At that time an honourable burial was also given to the many human remains that were found scattered in the forest.

Ruderi della base della XX Valeria Victrix a Chester: a fianco i resti dell'anfiteatro, sopra una torre.

Ruins of the base of the XX Valeria Victrix in Chester: next to it, the ruins of the amphitheatre, above, a tower.

Legio XX Valeria Victrix

This may have been one of the legions enrolled by Octavius, after 31 B.C. We know that it served in Spain, where it fought the Cantari between 25 and 13 B.C. It was then transferred to Illyria, participating in Tiberius' campaign against the Marcomanni in the year 6. After the disaster of Teutoburger the *XX Valeria Victrix* settled in lower Germany near Cologne, at *Oppidum Ubiorum*, and then moved to *Novaesium*, Neuss. In 43 it took part in the invasion of Britannia, where it was based in *Camulodunum*, Colchester. It fought against *Boudica* and, in 69 it sided with Vitellius, not suffering any consequences. It also fought with Gnaeu Julius Agricola in Scotland, where it set up base in Inchtuthil. It then returned to *Castra Decana*, Chester, where it remained for at least two centuries. It participated in the construction of Hadrian's Wall and also perhaps the Antonino Wall. The last reference to this legion dates to the IV century, and places it in Britannia. Its emblem was a boar.

Legio XXI Rapax

This was one of the legions enrolled by Octavius in 31 B.C., perhaps with conscripts from other units. As soon as it was formed, it was sent to Tarragonese Spain to fight the Cantari. In 15 it was stationed in *Regensburg*, in the new province of Rhaetia but following the disaster of Teutoburger, it was sent to Xanten in lower Germany, where it shared the base with the *V Alaudae*. In 43 it appeared to have been moved to compensate for the vacuums created by the invasion of Britannia, to *Vindonissa*, Windisch, in upper Germany. In the year 69 it supported its commander Vitellius, and marched with him to Rome to lay siege to the city, but this ended quickly when Vitellius was killed. In 70 it was sent to suppress the Batavian revolt, at the conclusion of which it returned to upper Germany at *Mogontiacum*, Mainz, stationed with the *XIV Gemina*. Shortly thereafter, it rebelled against Domitian, together with the *XIV Gemina*. When the insurrection was over, the two units were separated and the *XXI Rapax* sent to Pannonia, where it was annihilated during the revolt of the Sarmatians in the year 92. Its emblem was a capricorn.

Resti della porta romana di Regensburg.

Remains of the Roman Gate of Regensburg.

Legio XXII Deiotariana

Of all the legions this was the only one that was not typically Roman, as it was established in 48 B.C. by a barbarian. The unit takes its *cognomen* from Deiotaro, a king of Celtic origin, whose tribe was known as *Tolistobogii* and that lived in *Galazia*, today's Turkey. The sovereign, an ally of Gnaeus Pom-

peus, was made leader of all the Celts of Asia Minor. Perhaps to show that he was worthy of trust, or out of excessive ambition, Deiotarus hired an entire legion and trained it at his expense, using Roman counsellors, in accordance with the traditional provisions. In truth, his unit was significantly larger than normal as it included 12,000 infantrymen and 2,000 horsemen, divided into thirty cohorts. In effect it was equal to 3 legions and contributed decisively to the Roman victory in the third Mithridatic war. Reduced to a single legion, the unit was with Julius Caesar in the campaign against Pontus and in the battle of Zela in 47 B.C. Once the Galatian Kingdom was annexed, the legion became part of the Roman legions, because of the conformity of its training and its proven merits. Since the army now had twenty-one legions, it became the twenty-second. Augustus stationed it in Nicopolis, Egypt, near Alexandria, in the same base as the *III Cyrenaica*, to defend Egypt. In 26 B.C. it went with Elio Gallo to do battle in the kingdoms of Nubia, a war that was interrupted by the epidemics. From that moment, the legion remained in Egypt until its destruction probably between 132 and 135. Its emblem is not known.

Legio XXII Primigenia

This was the other legion formed by Caligula in 39, for his campaigns in Germany, and this also was dedicated to the goddess Fortune. Suetonius' scorn aside [7] the legion was involved in significant and certainly not negligible actions, after crossing the Alps and the Rhine, such as the battle that took place in Wiesbaden. The *XXII Primigenia* was then stationed in Mainz, to defend the *limes* of the Rhine, sharing the camp with the *III Macedonia*, from which area it probably departed for the fortunate campaign of Aulus Gabinius Secundus against the Chatti. We know that it supported Vitellius in 69, marching on Rome and parading its aquila through the city. But Vespasian defeated it in the second battle of Bedriacum and returned it to its base, without any additional punishment, an implicit confirmation of its merit. It was attacked by the Batavian rebels but did not succeed in repelling them and was moved first to *Vindobona*, Vienna, and later to *Castra Vetere*. Because of the loyalty it demonstrated against the rebel L. Antony Saturninus, Domitian granted it the title *Pia Fidelis Domitiana*. Publius Elius Trajan Hadrian was a tribune in this legion in 97-98 as was Didius Julianus in 170-171. Although it never left its camp, some of its vexillationes contributed to the realisation of Hadrian's Wall in Britannia and Antonino's Wall in Scotland. It participated in Caracalla's campaign in 213 in Germany, earning the title *Antoniana* and in the campaign against the Sassanians, in 233 in Persia, with Alexander Severus, again earning the title *Alexandriana*. However, shortly thereafter the emperor was lynched by his legionnaires, who elected in his place Maximinus Thrax. It earned the title *Pia Fidelis* on several occasion and fought against the Goths in 268. Sources cease mentioning it in the beginning of the IV century, but its disappearance appears to date to the age of Constantine. Its emblem was a capricorn and Hercules.

Testa della statua colossale di Costantino.

Head of the colossal statue of Constantine.

Legio XXX Ulpia Victrix

This legion was enrolled in 105 by the emperor Trajan, whose family name *Ulpius* is remembered in its *cognomen*, for his Dacian campaigns. Its first base was in Dacia, along the Danube frontier and it is likely that some of its contingents participated in the expedition against the Parthians. In 122 it was trans-

ferred to *Colonia Ulpia Traiana*, where it remained for the following centuries. From that time on it was principally involved in construction and in local police tasks. Between the end of the II and the beginning of the III century some of its detachments were sent to *Parthia*, in Gaul and to Mauretania, as the situation in Germany did not arouse much concern. Because of its support of the emperor Septimius Severus during the revolt of 193, it was awarded the title *Pia Fidelis*. It fought with emperor Alexander Severus against the Sassanians in 235. The final references to this legion do not go beyond the V century, ceasing completely with the dissolution of the Rhine limes. Its emblems were the capricorn and the gods Jupiter and Neptune.

Comprehensive Picture

A summary of all the components of the Roman army is reflected in the following chart, in which Q stands for *quingenary* and M for *miliary* [8]:

The Garrison of Rome

Unit name	Formation	Type	NO.	Strength
Praetorian Cohorts	1 - praetorian praefect 1 - tribune X 9 6 - centurions X9	Q	9	4.500
Urban Cohorts	1- urban praefect 1 - tribune X3 6 - centurions X3	Q	3	1.500
Cohorts Vigili	1 - vigiles praefect 1 - tribune X7 7 - centurions X7	Q/M	7	3.500 7.000
German Bodyguards	1 - decurion tribune	100/500	1	250
Scouts	praetorian praefect	300	1	300
Emperor's personal cavalry	praetorian praefect	M/Q	1 dopo il 23	300
Peregrini centurions	centurions *princeps*		1 dopo il 23	?
Foragers	*princeps* foragers	100	1 dopo il 23	100
Statores	praetorian praefect		1	
Chief centurions				
Sailors				
Total Rome garrison				10.000

FRONTIER ARMY OF THE PROVINCES

UNIT NAME	FORMATION	UNITARY ORGANIC	NO.	STRENGTH
Legions	1 - legion legate 1 - tribune 1 - camp praefect 5 - tribune 1 - 6 month tribune 59 centurions of wich 1 chief centurion	5.000 infantrymen 120 horsemen	25	125.000
Ausiliares				
Wings	1 - praefect 16 - decurions	D horsemen	250	125.000
Cohorts	1 - praefect 6 - centurions	D infantrymen		
Mixed cohorts	1 - praefect 3 - decurions 6 - centurions	D infantrymen horsemen		
Numeri				
TOTAL FRONTIER ARMY				250.000

FLEET

PLACE	UNIT NAME	FORMATION	TYPE	ORGANICO COMPLESSIVO
Miseno and Ravenna	praetorian fleets	1 - praefect per fleet navarchs centurions trierarchs	sailors called soldiers	40.000
Provinciae				
Britannia Germany Pannonia Moesia Ponto Syria Alexandria	flotte	1- prefetto per flotta		
GENERAL TOTAL				300.000

The Great Legionnaire Bases

Josephus Flavius [9] left us, almost certainly by reason of direct and personal experience, a detailed description of a Roman camp of the Imperial Era, confirming that in concept and structure little had changed from those of the Republican Era. He wrote:"*the Romans never expose themselves to a surprise attack; when they invade an enemy territory, they do not engage in battle before fortifying their camp... if the ground is irregular, first it is levelled; then the camp is measured, in square form.*

The interior of the camp is divided into rows of tents. The external perimeter resembles a wall and has towers at regular intervals; in the spaces between the towers are located ballista, catapults, stone-throwers and all sorts of artillery machines, all ready to be used. Four doors open along this perimeter wall, sufficiently tall to allow passage of beasts of burden and sufficiently wide to allow for exit in an emergency. The camp is intersected by roads that are laid out symmetrically; in the middle are the officers' tents, and in the very centre is the headquarters of the commander in chief, resembling a small temple... If necessary, the camp is surrounded by a trench that is four cubits deep and as wide."[10]

The temporary square camp of the I century, described by Josephus Flavius resembles the camp described by Polybius in the II century B.C. without any substantial differences, with the exception of a few adjustments made due less to any changes in the legions than to the changing nature of their tasks. Greater attention is paid to the defensive aspect, a sort of preliminary assay of a structure built for a more lasting use, in a context not necessarily related to wars, but neither to one of peace or pacification. In other words an embryonic stronghold, better described in the treatise *De munitionibus castrorum*, attributed to a pseudo Hyginus the Surveyor, written at an unspecified date between the I and the III century.[11] If this type of layout, that in truth is more ideal than real, was not used in legionnaire campaigns, it was nevertheless the prototype for the large permanent legionnaire bases, actually ancient fortresses, from the III century on. Contrary to the square camp of Polybius and of Josephus Flavius, Hyginus' camp is rectangular, with sides measuring 2,320 x 1,620 Roman feet in length, equal to approximately 700 x 490 m, thus slightly larger. It was to be used by more than 40,000 men, or three legions, praetorians, cavalry, auxiliary infantry, scouts and even an entire camel detachment. Consequently there was a strong density within its interior and less

Alcuni esempi del campo descritto da Flavio Giuseppe: Hatra, Ardoch, Rough Castel, Housesteads, Hardknott.

Examples of the camp described by Flavius Josephus: Hatra, Ardoch, Rough Castel, Housesteads, Hardknott.

space available to every soldier, approximately one third that of a traditional camp. Although it was a temporary camp, at least in the intention of the author, it eventually became the typical layout for new legionnaire camps that were being transformed into permanent forward bases, thus no longer following the canonical rules of field fortifications but those of permanent fortifications. With the expansion of the wars to:"*distant territories, it became necessary for the troops to remain longer on a particular site in order to consolidate their conquests; summer camps were integrated by winter quarters (hiberna), built in zones solidly controlled by the Romans. These castra hiberna provided the best equipped accommodations, especially for storage, but they did not yet have the permanent connotations of forts of the Imperial Era. This only occurred under Augustus, following the campaigns against the Germans beyond the Rhine. Between 12 B.C. and 16 A.D. the Roman army conducted a series of campaigns first under the command of Drusus, then under Tiberius and finally under Germanicus. The vastness of the territory of operations and the rigour of the central-European winters led to the construction of a number of large supply depots and semi-permanent winter bases. This tendency increased after the defeat of Varus in the forest of Teutoburger (9A.D.) and the loss of three legions. The trauma provoked by this disaster was such that Augustus advised his successor Tiberius not to further extend the frontiers of the empire; upon the death of Augustus, the Rhine and the Danube had in fact become the northern frontiers of the Roman world. By the middle of the I century the distinction between a permanent base and the hiberna was clearly established.*

Entry to the legionnaire fort of Porolissum in Romania and, next page, in Kastell Biriciana near Weißenburg in Bavaria.

Some of the first legionnaire bases were used by two legions, for example in Xanten (Vetera), in lower Germany; but usually they were only used by one. The fortresses used to house one legion of 5-6,000 were usually rectangular and occupied an area of approximately 20 hectares. The interior layout was similar to the temporary camps of Hyginus, divided into three sections; the command area (principia) now separated from the space for the legate (paretorium), was located at the crossway between the via principalis and the via praetoria."[12] At that point the camp resembled an ancient fortress, a defensive structure that will reappear, with the same layout, in the modern era!

Legionnaire Fortresses

During the Imperial era, besides the large permanent camps, there was also a proliferation of fortresses of various sizes, used for detached sections of the legions that at times were even smaller than cohorts. It is obvious that such structures no longer had a lightly protected residential function but were used for defensive purposes, especially in a hostile environment. This was no longer a different version of defence architecture but the debut of a new branch of such architecture. Specifically it was more of a *repressive architecture*, as its interior was not occupied by the weak, but by a conspicuous garrison, even two or three legions, whose purpose it was to dominate the surrounding populace, flaunting its inviolability and at the same time enjoying comfortable accommodations. The fortress was not meant to simply protect its occupants but also to help them in controlling the surrounding territory, arousing terror in any attackers to the point of inducing them to desist from even making the attempt. A product of advanced technology to achieve the maximum deterrent effect. During the reign of Hadrian, Arrian wrote, after an inspection

around the Black Sea:"*The fort (located at the entrance to the Faso), containing four hundred select soldiers, appeared to be very strong and very well located to protect those navigating on this side. Two wide trenches surround the wall. In the past, the wall was made of earth, and the towers built on top were of wood; but now the wall and the towers are of brick and the foundations are solid. Machines have been installed along the walls; in short, it is provided with everything to ensure no barbarian may approach and endanger those within by attempting a siege. But since it was necessary for the port to be safe for ships, as well as the entire area beyond the port inhabited by men retired from service and by a certain number of merchants, I considered it necessary, beginning from the double trench that surrounds the walls, to trace another ditch reaching to the river, encompassing the port and all the houses that lie outside of the walls.*"[13]

Braciere rinvenuto a Pompei dalla caratteristica forma a quadriburgum. Sotto: la cittadella di Gerusalemme e quella di Damasco.

Brazier found in Pompeii with characteristic quadriburgumshape. Below: the citadel of Jerusalem and of Damascus.

The triplication of the trench indicates that they are adhering increasingly to the criteria of a permanent fortress. As for the plan, we must presume it to be rectangular and consisting of a masonry perimeter wall made of brick or stone, with projecting towers at regular intervals to be used by the archers. The:"*city walls are normally interrupted by four doors, built with care because they would be a weak point in case of attack... The towers... are... an important element of the defensive wall, if for no other reason than the support they provide for the artillery pieces. The first external corner towers, according to J.Lander, appear after the wars against the Marcomanni, but this model does not come into common use until late in the III century... During the Low Empire... on the contrary, the additions to the defence are placed on the external facade. The fortresses with squared corner bastions are called 'tetrarchical' (from the political system implemented by Diocletian);*

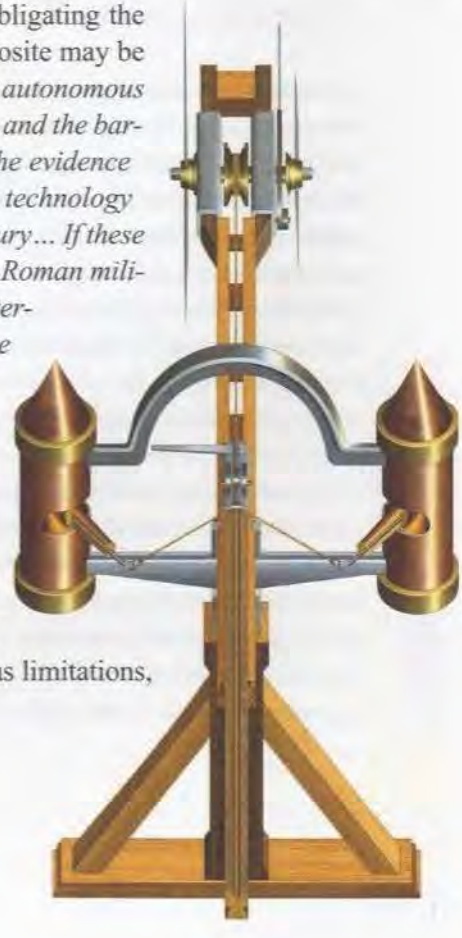
in fact they first appeared during the great crisis of the III century."[14]

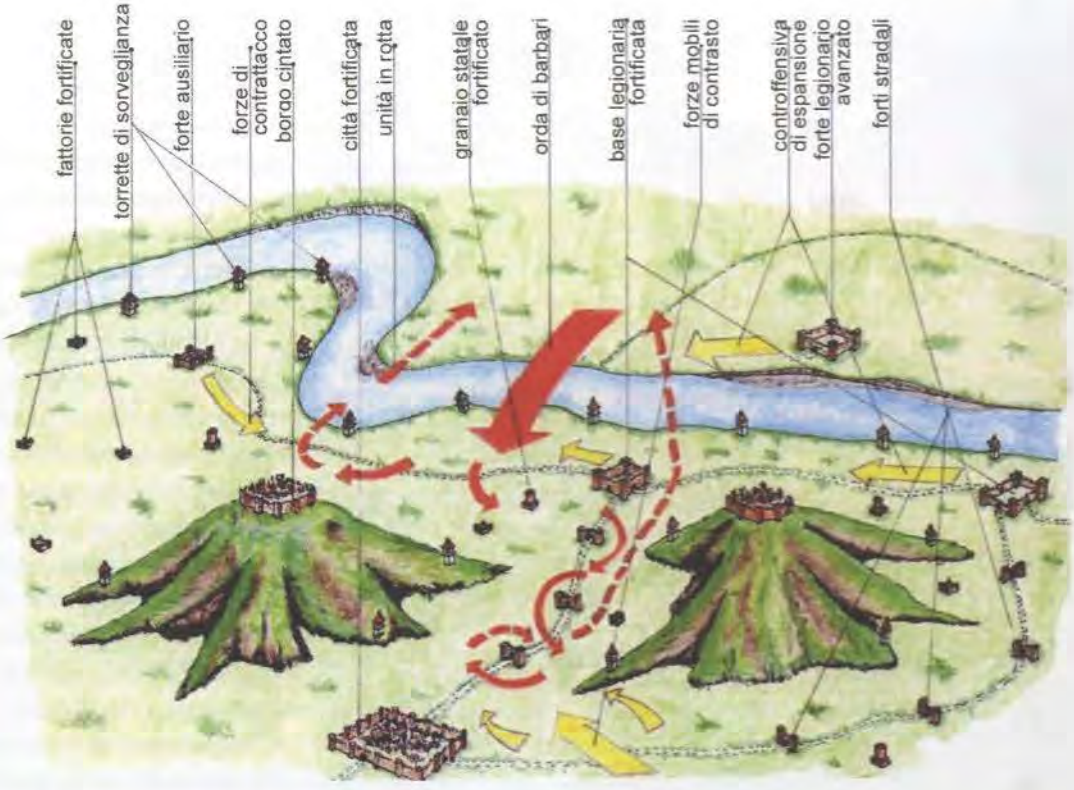
This type of fortification, a square or a rectangle with four square towers at the top, is older and it is part of the Greek repertory already described by Philon of Byzantium in the II c. B.C., with the generic name of *Tetrapirgos*. The Latin word, tetrarchiche, or even *quadriburgum*, does not refer to the four emperors but to the four towers! And it is emblematic to say the least that this same scheme also begins to appear and to multiply in the rustic villas that gradually begin to take on the appearance of ancient medieval castles![15] As for the external projection of these towers, extending from the perimeter of the enclosure, this was due to the need to reinforce flank defence due to the frequency of attacks and because it was a very effective system for the highly advanced elastic artillery that came into use during that time.[16]

Roma, Colonna Traiana: dettaglio di una scena ove è raffigurata l'artiglieria elastica coeva, ricostruita virtualmente sotto.

Rome, Trajan Column: detail of a scene depicting the elastic artillery of the era, below, its virtual reconstruction.

The progressive reinforcement of permanent camps has led scholars to believe there may have been a simultaneous increase in the offensive capabilities of the barbarians, especially in the obsidional context. In other words, probably beginning in the second half of the I century, the barbarians may have acquired the capability of conquering the traditional legionnaire fortifications, thus obligating the Romans to build increasingly solid and complex ones. But quite the opposite may be true! Military technology, like civilian technology in general:"*is not an autonomous phenomenon, but a reflection of the cultural and economic basis of society, and the barbarian society had not undergone any significant changes ... In reality, the evidence that has come down to us indicates that the progress of barbarian siege technology played only a very marginal role in the period between the I and the VI century... If these 'tactical' explanations of the revolutionary changes that took place in the Roman military architecture are not very plausible, there is a very clear strategic interpretation, one that can be applied to all strategies of 'in depth' defence. The Roman bases were transformed into strongholds not because the barbarians had learned to demolish simple walls (something they were probably always capable of doing), but because they had not developed significant siege capabilities ... [Therefore] faced with barbarians ill equipped to demolish serious fortifications defended by a moderate number of soldiers, with an ample reserve of food, these strongholds could wait for the arrival of reinforcements, to whom they could then provide various support functions.*"[17] Confirmation of this reasoning is provided by the fortification of the rustic villas, considered, in spite of their obvious limitations, sufficiently strong to repel enemy attacks for at least another century.





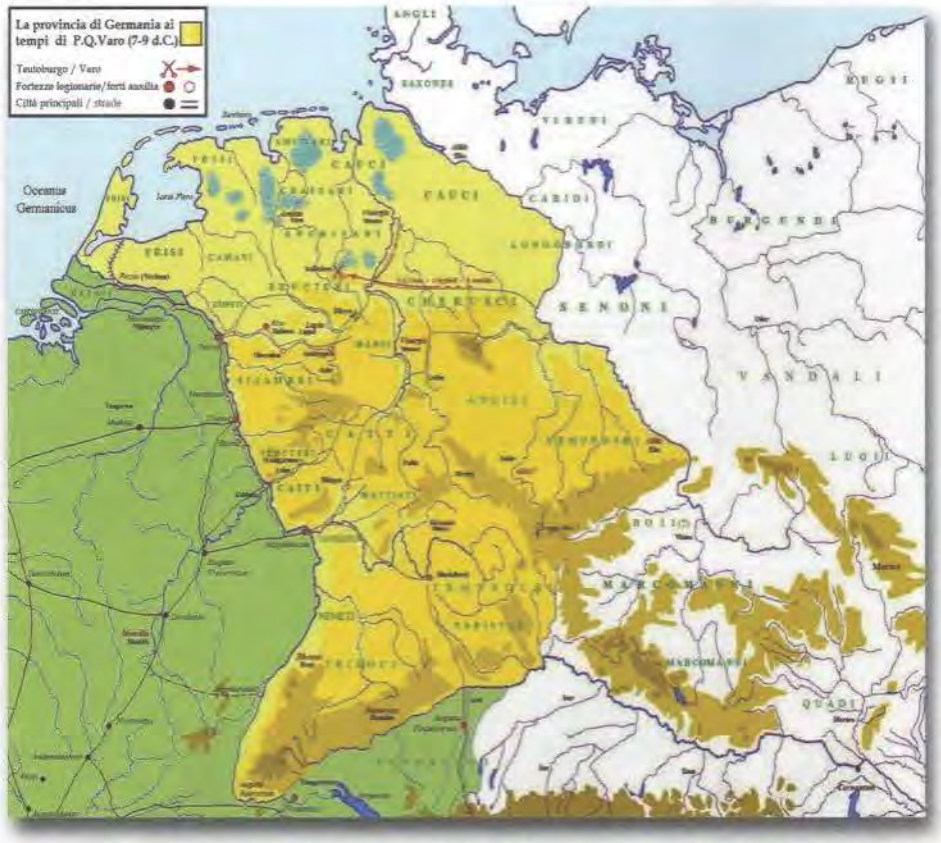
Scheme for 'in-depth' defence' and, side page, 'elastic defence'.

Communications and Telecommunications

The new global strategy of the Roman Empire, of which the just described legionnaire bases were the most obvious materialization, required the implementation and activation of an immense infrastructure. The peculiar feature of this infrastructure was, in addition to the many types of fortifications, their recourse to systems of communication and telecommunication, both networks indispensable to an effective coordination against barbarian incursions. And "*thanks to the indefatigable work of generations of scholars, the concrete elements of Roman policy regarding frontiers were defined in a coherent even if incomplete manner ... [In particular] during this phase of the Imperial era, the operational method of defending the frontiers against 'high intensity risks' was based on mobility or on offence, not on inactivity: combat was to take place beyond the frontier, not within. In other words, all the fixed defences constructed along the limes served only as a support infrastructure for offensive operations in the event of a more massive attack...*"[18]

To provide a more realistic definition of the principal elements of such a support system, in addition to the bases, forts and outposts, a no less significant role was played by the *military roads*, *control towers* and *signalling towers* and their related transmission devices. Concerning the first, which were the fundamental components of the system as they assured operational transfers and supplies: "*every sector defended was served by a network of 'horizontal' and 'vertical' roads,, the latter being axes or lines of penetration beyond the frontier and, at the same time, internal roads to provide for communication, reinforcement, movement of troops and resupply. Where the limes were not defended by frontier lines (the most important along the frontiers of*

Syria), the 'horizontal' border roads were used for reconnaissance to protect against infiltrations and minor incursions. When the external road along the frontiers was shorter than the internal lines of communication (as was the case with the limes of Rhaetia beyond the Danube), the 'horizontal' roads along the frontier served also as interprovincial communication lines. Based on the rapid concentration of mobile forces, it is clear that in this period of the Empire border defence depended critically on the density and quantity of the road network...."[19]



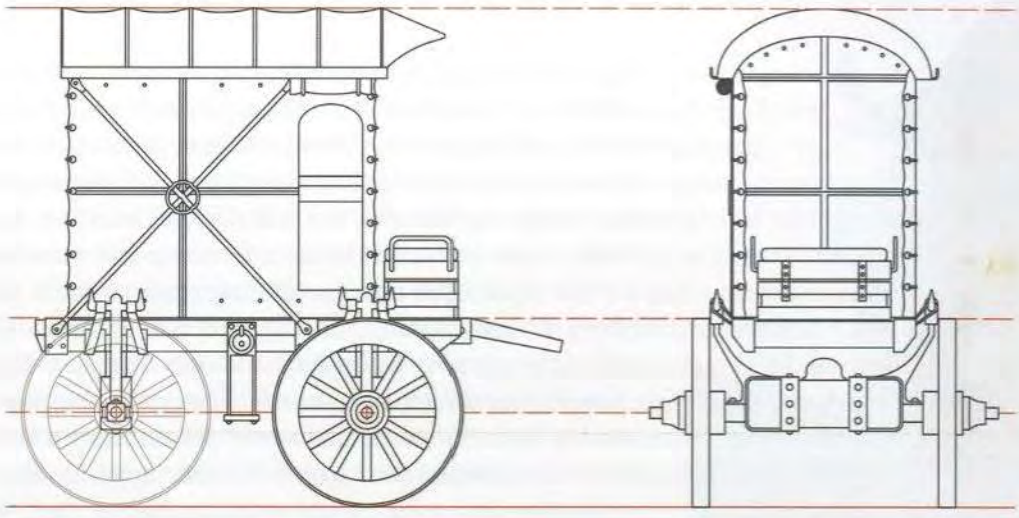
The province of Germany in the I c. A.D. and, next page, Pannonia in the II c. A.D.

It is doubtlessly interesting to observe that, specifically during this historical period, new types of wagons for the transportation of persons and cargo also began to appear. In this particular case they were used by the military administration being transferred and for logistical resupply. We know of at least one case in which elastic suspensions, destined to wide use in the future, were added to a wagon used for night travel, equipped with cots to make the journey more comfortable.

As for the towers:"*their function was to provide surveillance against infiltrations and warning in case of large scale attacks. The control towers were usually built directly into the perimeter fortifications if possible, as in the case of the turrets installed at intervals of approximately 165 metres along Hadrian's Wall in Britannia; they covered a vast range of surveillance, but were not very useful in alerting of danger.*"[20]

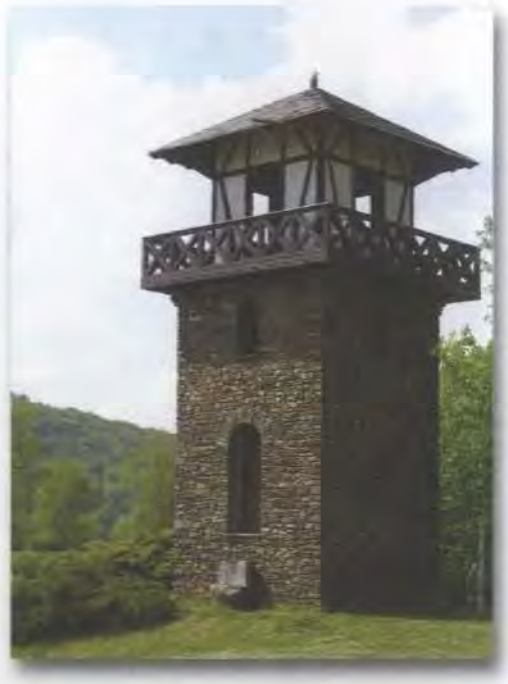
In reality these turrets were not used simply to send warnings, using elementary binary optical signals, for they also allowed for sending more detailed and complex dispatches by means that we will shortly describe. Thus almost all the defensive structures of the legionnaires and almost all the nearby cities were provided with ancient two way transmission terminals and telegraph stations, so that:"*a communication network must have existed even where there is no trace of a frontier barrier: a scene on the Trajan column depicts a typical example of signalling centres along the Danube, where there was no wall or other type of barrier.*

In Britannia, where the two legionnaire fortresses of York-Eburacum and Chester-Deva were behind Hadrian's Wall, at a distance, respectively, of more than 160 and 185 kilometres, a 'vertical' line of signalling towers has been found that connected the Carlisle sector of Hadrian's Wall with the fortresses of the VI Victrix legion in York."[21]



Carrozza con cuccette per viaggi notturni.
Carts with cots for night voyages.

Means of Transmission



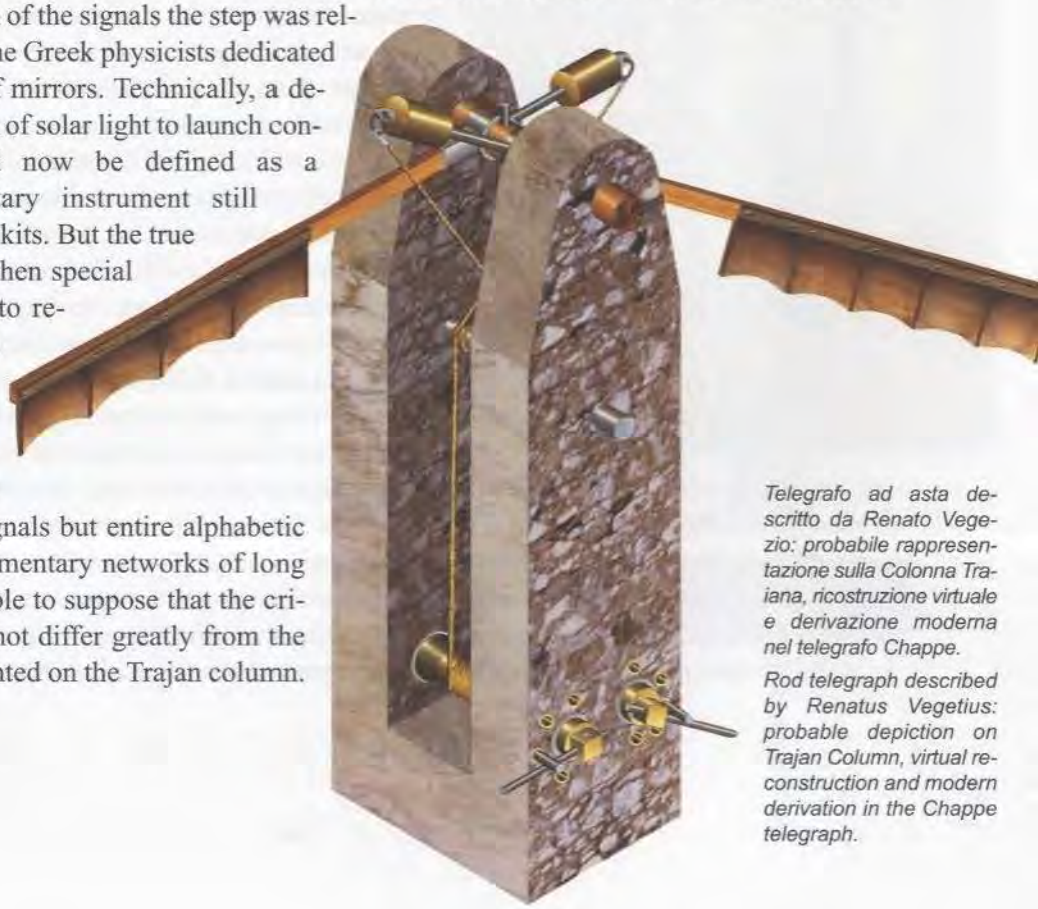
Augustus ensured that young couriers were staggered along military roads at brief intervals to deliver dispatches quickly. For the same purpose, in order to improve postal services, he later introduced fast wagons so that couriers could travel from one corner of the empire to the other. Implicit that the same emperor would be highly interested in any innovation that could abbreviate the dead times of long distance communication. Regarding this very delicate and vital aspect of the Roman military apparatus historical writings are greatly deficient. Since historical reports took a very humanistic approach, they systematically ignored the varied technology that already existed and the conclusions they reached frequently appear to be absurd and enigmatic, though in close adherence to their sources. The only alternative to illustrating a less conventional operational context is to compensate for this deficiency by thematic studies on the devices and mechanisms that surely existed and were used.

For example, when the Chappe telegraph appeared during the French Revolution, the world was astonished and surprised. In a few years, the most evolved nations acquired this device, developing extensive networks. With it they were able to exchange information and news at enormous distances, at a speed that had heretofore been inconceivable, the premise of today's live broadcasts. How is it possible that such an extraordinary and revolutionary invention could exist in the Roman era without arousing an even minimal astonishment? And yet Publius Flavius Vegetius Renatus reported almost incidentally that:"*on the towers of the castles or of cities there are beams: by positioning them either vertically or horizontally one can communicate what is happening.*"[22] What was described as beams, were in reality light rods visible at a distance of several kilometres, perhaps between 5 and 10, in ideal conditions and on a homogeneous background. By carefully manoeuvring them, as if they were vexilli or llabari 5-6 m in size rather than beams, and by changing the inclination of each 45° at a time, they succeeded in having each position equate to a letter of the alphabet and to transmit a brief dispatch, relatively quickly.

The very conciseness of the quotation would lead one to imagine that a telegraph of the type had been in use for some time, meriting the mention only because it was being used by the army! Pliny, in his monumental Naturalis Historiae, stated that:"*in Africa and in Spain, Hannibal's towers ...[true] observers of defence were instituted under the thrust of*

terror because of pirates, and thus they realised that the fires ignited on the sixth hour of the day were observed on the third hour of the night by those who were in the most backward point..."[23] As the difference was approximately 12 hours, one must suppose that the line was extremely long. It is also interesting to note that the generic definition of *turris Hannibalis* does not mean that Hannibal was its inventor, of little import for the Roman mentality, but rather that he was the user or the person who had decided to install it. It is also surprising how such extremely elementary systems could achieve results that today require such highly complex instruments. Cruising ships, for example, could communicate their status every day to their base simply by freeing two or three carrier pigeons of the many they carried on board in special dovecotes. At an average speed of sixty km/h, the bird could cover 1,000 km in a day, directing itself perfectly and returning to his dovecote. This meant that both the fleet of Miseno and of Classe could, even from the limits of their respective naval areas of jurisdiction, communicate what was happening within the same day!

Several centuries were required to go from signals by fire and smoke to an actual telegraph, a system that may have originated from the vivid flashes of light projected by the glossy metal shields. From mere observation to codification of the signals the step was relatively short, such that some Greek physicists dedicated themselves to the study of mirrors. Technically, a device that uses the reflection of solar light to launch conventional flashes would now be defined as a *heliograph*. An elementary instrument still widely used in emergency kits. But the true step forward took place when special turrets began to be used to receive and relaunch optical signals. Once the technicians of the legions had mastered these methods they were able to transmit not only simple binary signals but entire alphabetic messages, organizing rudimentary networks of long telegraphic chains. Plausible to suppose that the criteria of such lines would not differ greatly from the one schematically represented on the Trajan column.



Telegrafo ad asta descritto da Renato Vegezio: probabile rappresentazione sulla Colonna Traiana, ricostruzione virtuale e derivazione moderna nel telegrafo Chappe.

Rod telegraph described by Renatus Vegetius: probable depiction on Trajan Column, virtual reconstruction and modern derivation in the Chappe telegraph.

It soon became obvious that though a shield of shiny metal could transmit to great distances without any difficulties, it was completely useless without the sun. In truth, there was also some problem concerning its angle in respect of the sun, hence transmission and response could take place only in some directions and in some hours of the day. There was also the unresolved problem of the extremely limited amount of information that could thus be conveyed. After many attempts they were able to build actual heliographs, very similar to lighthouses, that could also be used at night, and not infrequently the lighthouses themselves were used as nocturnal heliographs. The system thus reached a significant functionality, but it could not transmit anything more than simple binary signals. However, it did serve as the basis for the fixed dispatch transmitter, or water telegraph, better known as synchronous telewriter, invented a few centuries prior again by the Greeks, in this case, Aeneas the Tactician.[24]

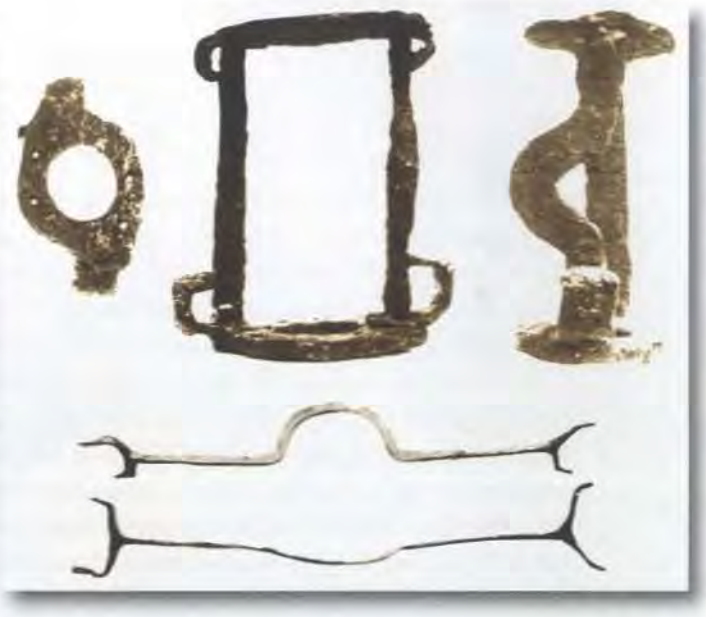
This system was very simple, without any distinction between the transmitter and the receiver as the same could provide both functions in alternate phases. It could also function as an intermediate repeater allowing transmission over much greater distances that the range of the heliograph or lighthouses. It consisted of a cylindrical container, with a faucet at the base and a graduated float within: each notch, identified by a precise number, corresponded to a different pre-established message, for example one of the following sequence of four dispatches:

I NULLA QUESTIO
II AUXILIA NAVALIA
III MILITES DEFICIUNT
IV NON HABEMUS PANEM

Built with a meticulously identical volume and faucet, one was located in each station and filled with water to the maximum level, ready for use. To begin transmission, a flash of light was sent to the receiver by means of a metallic mirror or the eclipse of a powerful flame. Upon receiving confirmation by a second flash of light, a third ordered the simultaneous opening of the faucets. The water began to flow into the containers, causing in both a synchronous descent of the graduated float, notch after notch. When the numbered float in the transmitter, corresponding to the preselected dispatch, touched the upper border of the cylinder, a final flash ordered the closing of the faucets, allowing the receiver to read the same number as the transmitter, or the message. To give an idea of the operational sequence, let us suppose a container of 30 cm in diameter by approximately one meter in height, divided into 10 notches, one for each 10 cm. If equipped with a faucet of 10 litres per second, the movement of every notch required approximately 80 seconds, or 12 minutes to transmit the final one. Thus, in order to transmit the messages III - MILITES DEFICIUNT on our list, that is, *we need soldiers*, only 4 minutes pass between the second and third flash of light!

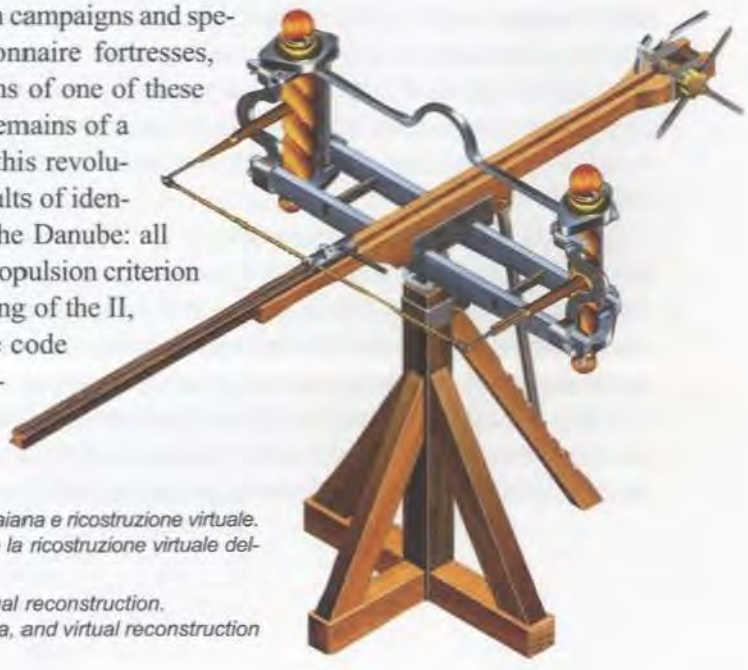
From a strictly technical viewpoint this was the forerunner of the asynchronous transmission system, similar in concept to our modern telefax. The dispatch, in fact, was transmitted by an analogic variation, but reconstructed by contemporaneity of intervention between the transmitting and the receiving

station. Since the only command transmitted was the opening and closing of a specific device, even if it were intercepted no message could be deciphered. This system was reliable and simple to build and to use. It is probable that with some slight modification of the float, perhaps by transforming it into a graduated cylinder slightly smaller than its container, a sort of giant syringe, they might have achieved a device that could even function on unstable surfaces, such as ships. Its maximum range depended, as mentioned, only on the heliograph, that is the visibility of its luminous signal. If it had been launched from the lighthouse of Alexandria, for example the range of transmission could have reached 60 km., about forty for the lighthouse of Miseno. We presume however, that they did not normally exceed about thirty km, using repeaters for greater distances.



The Imperial Palinton Artillery: Technical Evidence

Observing the Trajan Column we note that many scenes depict legionnaires brandishing small artillery pieces that differ from those on the rare images that have come down to us and from the pedantic descriptions of the technicians of antiquity. In other scenes there appear other pieces, basically similar, but placed on two-wheeled carts. That they are pieces of artillery is demonstrated less by form than by the context and conduct of the users intent on taking aim: but from the technical viewpoint those pieces, whether fixed or horse-drawn have not the least resemblance to those previously described, according to archaeological findings. Another extremely significant detail is the fact that recently unearthed relics that must certainly be ascribed to elastic artillery pieces are in no way compatible with those of the Republican era. We must therefore conclude that a new generation of artillery had been developed and provided first to the elite units, destined to the Dacian campaigns and special operations and then gradually to all legionnaire fortresses, especially forward ones. Sifting through the ruins of one of these bases, in Hatra, near today's Al Hadr, Iraq, the remains of a ballista were unearthed, the largest example of this revolutionary concept. Other relics from smaller catapults of identical concept, were found in Orsova and along the Danube: all confirm the use of elastic artillery of a different propulsion criterion between the end of the I century and the beginning of the II, as well as the exact interpretation of a valuable code from the high Middle Ages regarding their construction. In conclusion, it should be remem-

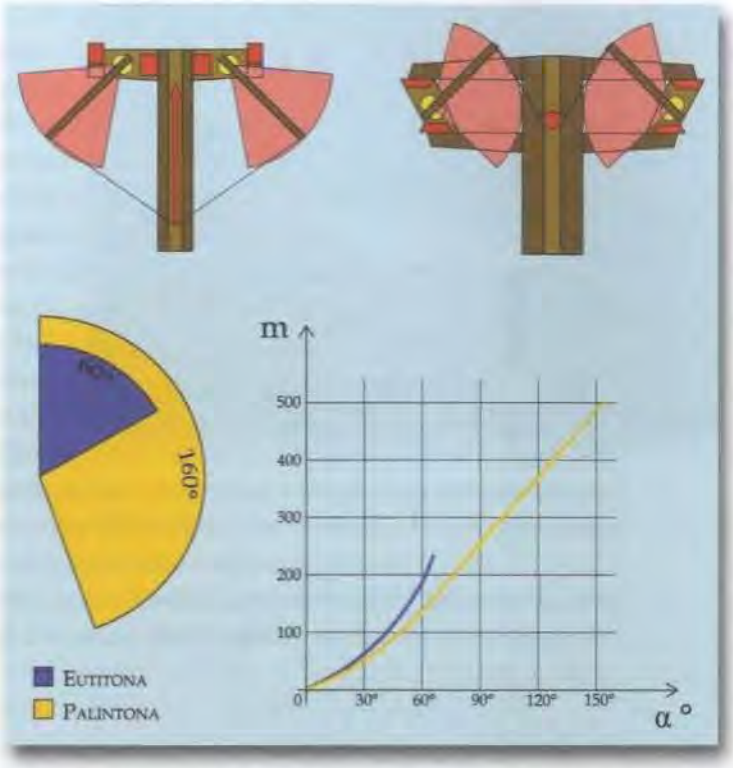


Nella pagina a fianco: l'artiglieria ippotrainata sulla Colonna Traiana e ricostruzione virtuale. In questa pagina: I reperti rinvenuti ad Orsova, in Romania, e la ricostruzione virtuale dell'arma a cui appartenevano.

Side page: horse pulled artillery on Trajan Column and virtual reconstruction. This page: remnants of weapon found in Orsova, in Romania, and virtual reconstruction of the original weapon.

bered that until that time, the only way to reinforce the function of elastic artillery was to increase the diameter of their nervine coils, similar to what will occur with the calibre of powder artillery. But the analogy ends here as, contrary to cannons, a large ballista could also hurl small balls, presumably at greater distances.

Sources make no mention of this second capability either because it was obvious or, paradoxically, because the opposite was true. In other words, when a ballista threw small balls to a greater distance, the reason was not simply the size of the projectiles. Since the initial speed was a function of the speed of rotation of the arms, and as this did not vary because of the moderate difference in the weight of the projectile, in order to vary the range they had to intervene on the elasticity of the coils, exploiting it as much as possible. According to many contemporary sources the artillery of the Imperial era was much more effective than that of antiquity. For example, we know from Ammianus Marcellinus that the initial speed of the darts or arrows issuing from the scorpions was so great that they caused sparks as they rubbed along the launching canal. Even if this had a metal covering, which appears to be the case in some archaeological remnants, such a manifestation could result only from an initial speed of a hundred or so meters a second, while practical tests have never exceeded sixty, also confirmed by calculations.



Schema di confronto fra le prestazioni dell'artiglieria di tipo eutitona e la palintona.
Comparison scheme of eutitone and palintone artillery.

Similarly, according to the writings of Flavius Josephus regarding the pounding of the wall of Jerusalem by the large ballistas of the X Legion, the average speed of their balls was around 70-80 m/sec, with an initial value that was obviously superior and not much removed from the one mentioned above.[25] Difficult to believe that such discrepancies are a simple error in calculation or the exaggeration of the historian: much more logical to view them as radically innovative propulsors. In brief, in order to increase the range, a stronger or longer thrust of the projectile would have been required, as occurs with the barrel of a rifle as opposed to that of a gun. The first would have required a lengthening of the arms but, as the ancients knew and the moderns easily calculated, these could be neither too short nor too long. A radically different matter for the other method that has been strangely ignored. In fact, no one seems to have considered that there were two methods to throw an object. As tennis players are aware, a blow can be struck forward or backward, with very different dynamic consequences! In a similar manner the arms of elastic artillery could rotate in two opposite directions in respect of the frame: toward the exterior, eso-rotating, or toward the interior, endo-rotating. This caused two very different accelerations produced by rotations of 60° and in excess of 160°, respectively. At rest, the bowstring that in the first case was always behind the frame, in the second was always in front, retreating backward when in tension. Which transformed the string-arm system from a rest configuration M to a V, with the vertex toward the shooter when loading had been completed. The greater tension provided by the almost 100° of additional torsion to which the coils were subjected, al-

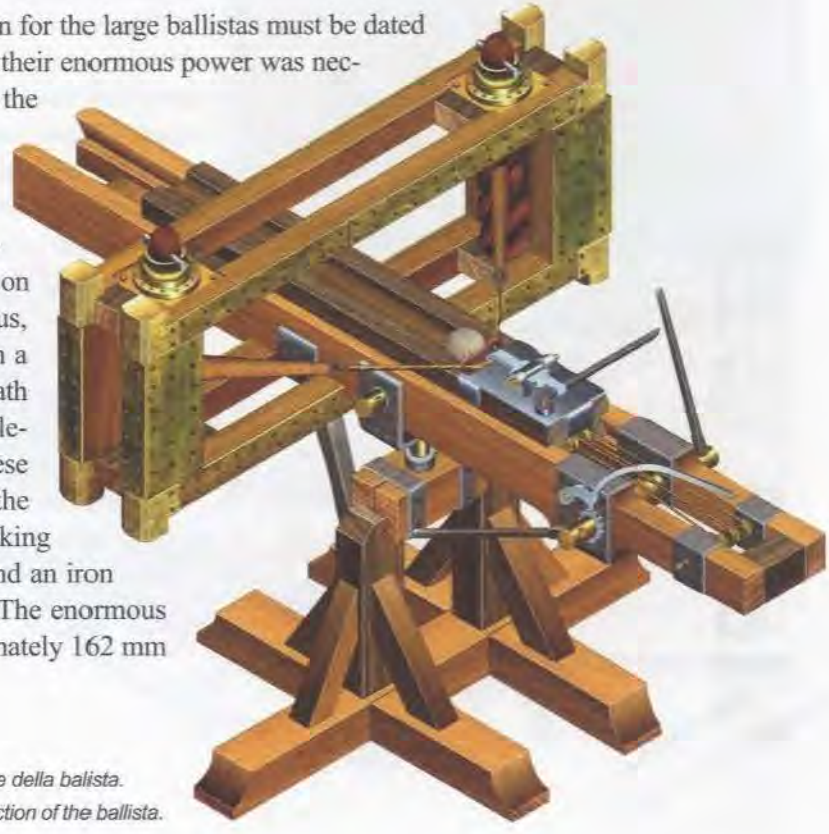
lowed them to store greater power. Furthermore, the prolonged return stroke, almost double that of the older configuration, gave the projectile a longer thrust. The sum of the two increments achieved much longer ranges, in excess of 100%. Supposing, for the sake of simplicity, that the power of the coils in both configurations was approximately linear but that in reality varied in an exponential manner in favour of the latter, the diameter being equal the range would have increased from the almost 200 to more than 400 m.

From a formal aspect, like the horns of the composite arch that, once freed of the string, fold forward, or reverse, the arms of the second type of propulsor also would be in front of the frame when at rest. Because of the inverse configuration, the ancients defined the composite arch as palintone, that is with the inverse string, from palin=inverse and tonos=string, and eutitone, that is with correct string, from eu=correct, the traditional one. It is highly likely that the same distinction was made for groups of motopropulsors, according to whether their arms were eso-rotating, eutitone or endo-rotating, palintone. In the second case, the frame would have had to have transversal dimensions of not less than double the length of the arm, thus visibly larger than traditional frames of the same calibre. Since we know that each arm was no longer than six modules, the congruity of the palintone machine implied an interaxis between the coils of barely more than 12 modules. Consequently, the thickness of the horizontal crosspieces on the frame was greatly increased because they were much longer and also because they lacked any internal struts.

It may have been this very need that suggested the use of a frame made completely of metal for the smaller pieces. In this, the crosspieces became slim coupling bars made with small tiles of forged iron with special pins to insert into the supports of the coils. The result was arms that were less heavy and bulky, easy to transport and quicker to use and to repair, as well as more precise thanks to the improved aiming devices provided by the arched shape of the upper bar. With all due reservations, it is significant to note that this last component, which is very evident on the bas-reliefs of the Trajan Column, resembled an arc between two beams, an architectural solution that was exquisitely Roman and ideal for the aiming device of a catapult.

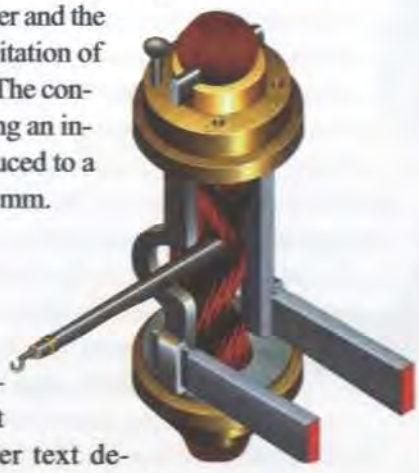
The Hatra Ballista

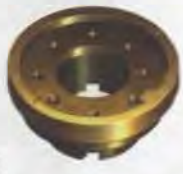
The adoption of the *palintone* configuration for the large ballistas must be dated to the advent of the Empire, if not before, as their enormous power was necessary for the interdiction defence firing that the new legionnaire bases required. Difficult to establish if these armaments were dictated by these needs or if they permitted them! Certainly the greater bulk of such pieces was not a limitation as they were statically located on bastions. Thanks to some extremely propitious, and rare circumstances, the remains of such a large calibre ballista were discovered underneath the ruins of the Hatra fortification, one of the legionnaire bases east of the Iraqi desert.[26] These include all the armoured plates of bronze, the *modioli* with the related rotation and blocking tracks also in bronze, five bronze pulleys and an iron grappling hook, probably the spring hook. The enormous *modioli* had an internal diameter of approximately 162 mm



La base di Hatra in Iraq: i reperti e la ricostruzione virtuale della balista.
Hatra base in Iraq: the remnants and the virtual reconstruction of the ballista.

and an external one of approximately 280 mm: they rotate on thick plates located at the extremity of a frame 2400 mm long, 650 mm high and as wide. Even these metric indications alone reveal the low rapport between the diameter and the height of the coils, indicative of such an exasperated exploitation of torsion as to require a five return pulley-block for loading. The condition of congruity for the palintone configuration, requiring an interaxis larger than the sum of its arms, is achieved, as reduced to a formula it is 2x6x162=1944 mm, total, less than the 2000 mm.



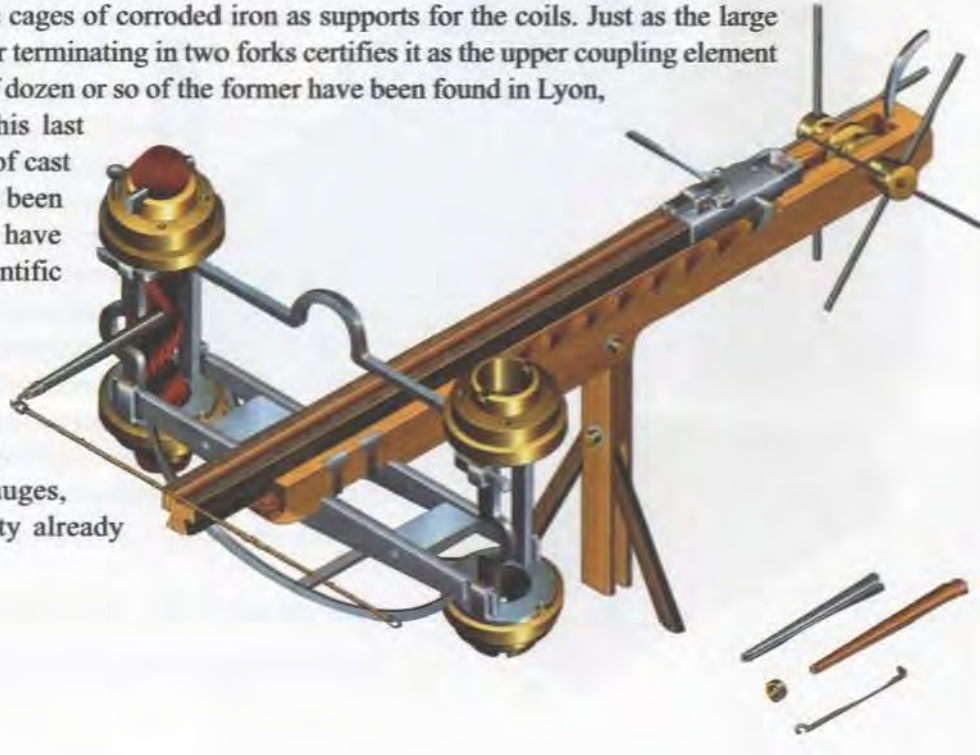


Hero's Catapults

The existence of portable palintone artillery is confirmed not only by the images on the Trajan Column but also by a singular medieval re-elaboration of an older text describing a small portable catapult, defined as *cheiroballistra* by Hero, in Latin literally *manuballista*. Four manuscript copies scattered in as many European archives, the text in Greek and its graphics signed and in colour, in technical axonometry, some of the first in history! The exceptional similarity of the elements described and designed with the archaeological relics of the last decades provide us with the characteristics of a *palintone* launch weapon that the Romans defined as *manuballistra*, literal translation of the Greek cheiroballistra, a small but highly effective weapon.

We know, though indirectly and without any objective proof, that the *cheiroballistra* and a variant perfected by including cylindrical containers to protect the coils, was used by the Roman army after the first half of the I century in fixed field position, on a static or rotating mount and that within the space of a few years, it became the preferred light artillery of the legionnaires in every corner of the immense *limes*, from the shores of the Red Sea to the Atlantic, from the fogs of Scotland to the mirages of the Sahara. Obviously relics of such a widely used weapon, little subject to deterioration and relatively economical, cannot be completely lacking and the presence in the majority of cases of a concavity along their longer side, to prevent damaging the arms in their return oscillations, easily certifies those cages of corroded iron as supports for the coils. Just as the large central concavity of a single bar terminating in two forks certifies it as the upper coupling element of the palintone engines. A half dozen or so of the former have been found in Lyon, Orsova, Gornea and Rabat, this last made not of wrought iron but of cast bronze, though only two have been found of the latter, but they have proven to be essential for a scientific and material reconstruction.

In general, a coil support consists of two plates, both with a large hole in the centre, required for anchoring and preloading. Two vertical gauges, one with the central concavity already

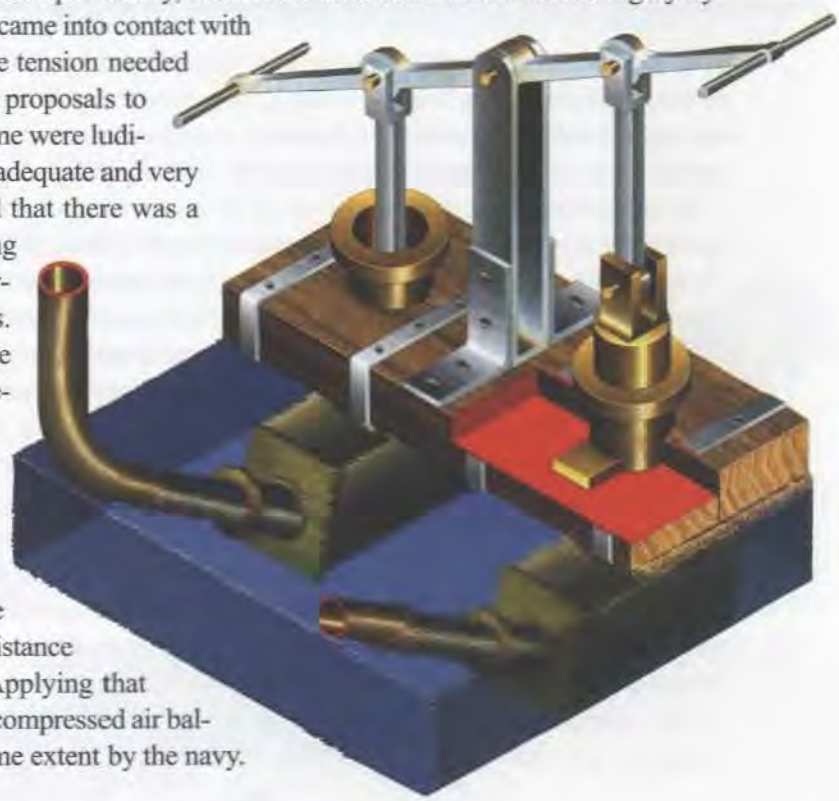


mentioned, keep them parallel and coaxial and have two pairs of rectangular symmetrical rods, the larger one below and the smaller one above. A large rod joined to the shaft is inserted into the lower one and an arched rod is inserted into the upper one to maintain it straight and to suppress oscillations. Logical to presume that in order to increase the effectiveness of their light artillery after the first half of the I century, Roman technicians succeeded in using the palintone configuration for the small pieces also. Perhaps they were advised by Hero, perhaps they copied his prototypes. The small catapults thus became small ballistas, or hand held ballistas, or *manuballiste*, a name that will soon become *ballistra* and then *balestra* (crossbow): but at that point the Middle Ages had already begun.

To justify so many transformations and the significant increase in weight, a negative factor for a portable weapon, their effectiveness must have been impressive. The exceptional ranges reported by contemporary writers are thus credible; as is credible that they were able to fire beyond the Rhine to cover the crossings of the legions; credible also that they were capable of crushing any armour. And especially credible the enormous savings on fortifications since these could now be built with fewer towers with a wider interaxis.

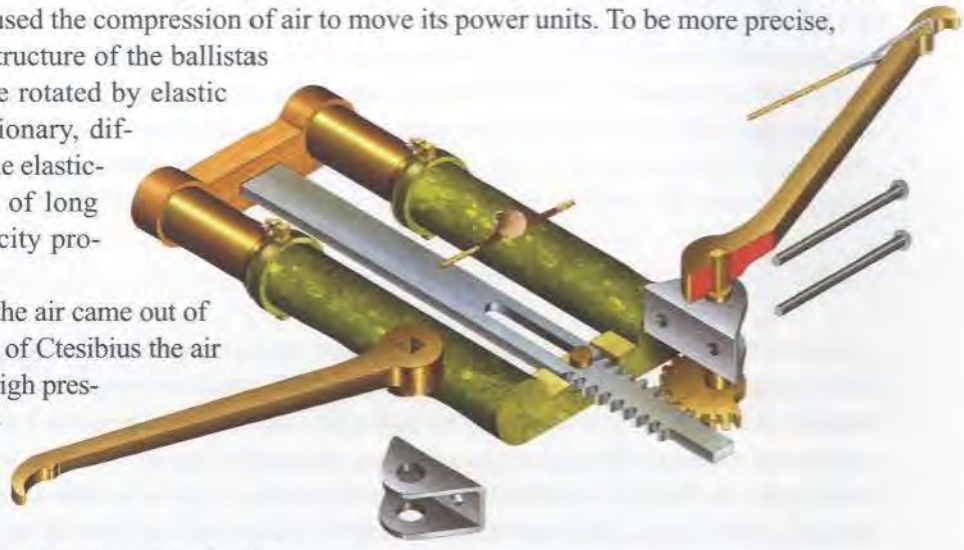
Naval Artillery

If there does not appear to be any chronological distinction between the use of elastic artillery on the ground and at sea, the same cannot be said for their respective features. Since the sea did not have the serious limitations of weight and bulk, naval launch machines were always larger than field ones and perhaps even larger than those used from fortifications, a peculiarity also applicable to powder artillery. But this was not the only difference as even during the Roman era, for anything to be used at sea in a constant and reliable manner, some serious deficiencies had to be resolved. Specifically, since the elastic coils were made of highly hygroscopic fibres that lengthened when they came into contact with water or humidity, they greatly reduced the tension needed for the motor units. There were numerous proposals to eliminate this technical defect: of these, some were ludicrous, others over-ambitious, still others inadequate and very few were actually valid. But all indicated that there was a problem and that it was resolved, leaving many archaeological traces, literary references and additional technical derivations. The search for an elastic and impermeable motor, equal in power to a torsion motor, became the challenge of military technology of the Imperial era, leading to the rediscovery and the perfection of devices and intuitions that had demonstrated potential in the past. For example, little imagination was required for those familiar with double acting pumps to recall their great elastic resistance when the exhaust valve was obstructed. Applying that simple observation, Ctesibius developed a compressed air ballista that appeared to have been used to some extent by the navy.



His weapon, however, was not built to expel a projectile by a violent jet of air like our modern ones but was rather a device that used the compression of air to move its power units. To be more precise, it was not unlike the basic structure of the ballistas of the era, whose arms were rotated by elastic coils. The true, and revolutionary, difference was in substituting the elasticity provided by the torsion of long organic fibres into an elasticity provided by compressed air.

Like its archaic prototype, the air came out of the shaft, while in the ballista of Ctesibius the air remained in the cylinders at high pressure an instant prior to shooting and at low pressure an instant after. It was always the same air and the same quantity, with only the volume changing, exactly like a spring inside a rail buffer. Perfectly aware of these dynamics, cautious Philon of Byzantium in the second century B.C. did not neglect to point this out, defining it as an *air spring ballista*.

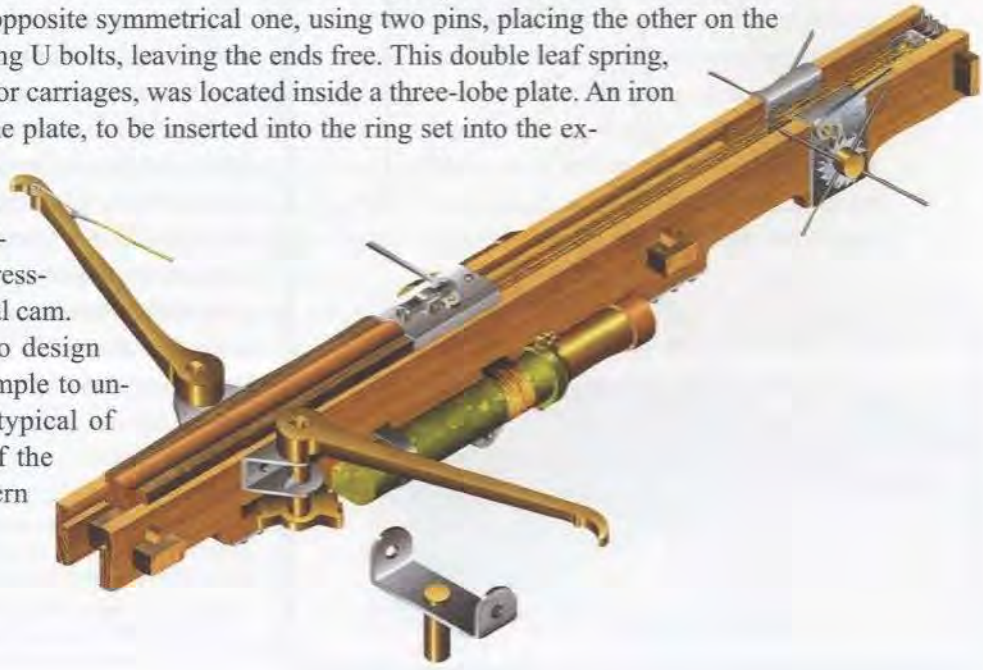


La balista pneumatica di Ctesibio: rilievi e ricostruzione virtuale esplosa e complessiva.

Pneumatic ballista of Ctesibius: reliefs e virtual reconstruction.

The robust bronze springs evolved in a similar manner from observation of the conduct of metal foils, especially those on cutting weapons which when inserted into an interstice and subjected to a significant stress, folded and then straightened out suddenly when the stress ceased, returning instantaneously to their original shape. From this to a leaf spring, of iron or bronze, was a very short step. If anything it was the use of the notoriously inelastic bronze rather than iron for the strong leaf springs of the catapults that suggested a possible naval use, as the choice was based on the need to avoid corrosion by salt water. In this case also it was Ctesibius [27] who built the catapult, evidence that he was working on a program of alternative naval armaments.

Various allusions indicate that Ctesibius limited his bronze springs to only two leaves. Of these he fixed the main one to an opposite symmetrical one, using two pins, placing the other on the extrados of both, perhaps using U bolts, leaving the ends free. This double leaf spring, very similar to the one used for carriages, was located inside a three-lobe plate. An iron pin was welded unto the same plate, to be inserted into the ring set into the external facade of the arm, becoming the fulcrum of the system. With this pin, the four-section arm rotated by compressing the spring with its terminal cam. A rather complex solution to design but, once built, extremely simple to understand and assemble and typical of the catapults and ballistas of the era, rather similar to a modern



bottle opener with movable arms. Once the device was completed, that is once its component parts were assembled, by pulling the bow string the arms were made to rotate and they, in turn, compressed the leaf spring through the cam. When the springs were flat the rotation ceased and, the weapon now loaded, a ratchet pawl wheel put it in safety mode. When the block was released, the springs immediately resumed their curvature, violently pushing the arms, the string and the dart, exactly as will occur more than fifteen centuries later in the medieval crossbows with steel arc.

Automatic Weapons

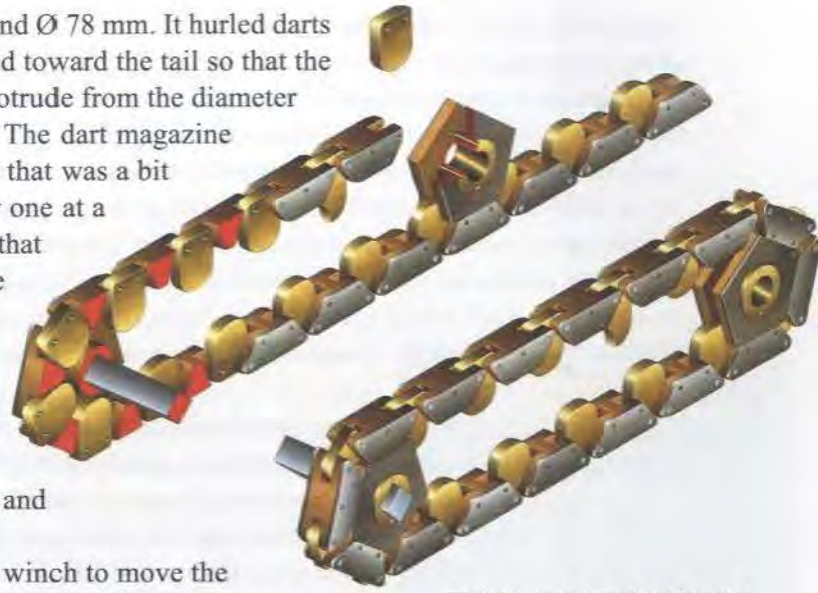
The navy also needed a significant firing power from mobile platforms, especially to eliminate insidious enemy shooters from the shores of large rivers. River craft that continuously patrolled the Rhine and the Danube, were a very special and abundant type of craft. Their weapons were required to hit barely visible and unfortified targets during navigation, at mid range. The repeat catapult, invented a few centuries prior, was ideal, but it was not used because of its excessive consumption of ammunition and its ineffective penetration. Installed afore it would have transformed those slim vessels into the forerunners of river patrol boats. As for the congruity of the definition 'automatic weapon', a brief explanation is required.

We currently define as automatic a weapon that, after the first shot, continues to fire without any additional commands. Mechanically this means that the feeding phase, the explosion of cartridges and expulsion of related cases, continues sequentially until the magazine is empty, without any help extraneous to the dynamics of the weapon. Thus, any electric, pneumatic or hydraulic servomotors used to increase the rate of fire nullified the meaning of automatic. The label mechanical automatic weapons or machine guns and mechanical machine-guns was coined for these armaments. A specification only apparently redundant as it highlighted the external mechanical assistance provided by a lever. Accordingly, the aforementioned mechanical machine-guns should be defined as servo-assisted. Paradoxically, this explanation, which seems to be perfectly suited to the most futuristic arms, also applies to the repeat catapult of Dionysius of Alexandria!

Historically the repeat catapult left only the briefest of traces in the already limited sources, with the exception of a detailed description by Philon.[28] Impossible to establish with any degree of certainty when and how frequently it was used, although nothing contradicts the decision of the technicians of Mainz to provide their reconstruction of a Roman river craft, retrieved from recuperated relics, with a repeat catapult astern, in many aspects extremely logical and rational. Perhaps more than its mechanics it was its criteria that spread and continued through the centuries: we do know that during the war of 1894-95 with the Japanese, the Chinese used repeat crossbows and that they were considered highly effective. Reloading took place by activating a lever at each blow, a solution reminiscent of the semiautomatic Winchester rifle. Obvious to conclude that the Chinese crossbow is to the catapult of Dionysius what the Winchester is to the Gatling machine gun! Without considering that both the crossbow and the rifle had to be reset and re-aimed every time they were fired thus losing the time that had been saved in reloading! The repeat catapult, on the other hand, did not need to be moved and could continue to fire even as the magazine was being recharged.

Philon describes a motor for the repeat catapult that was very similar to the traditional torsion motors as the

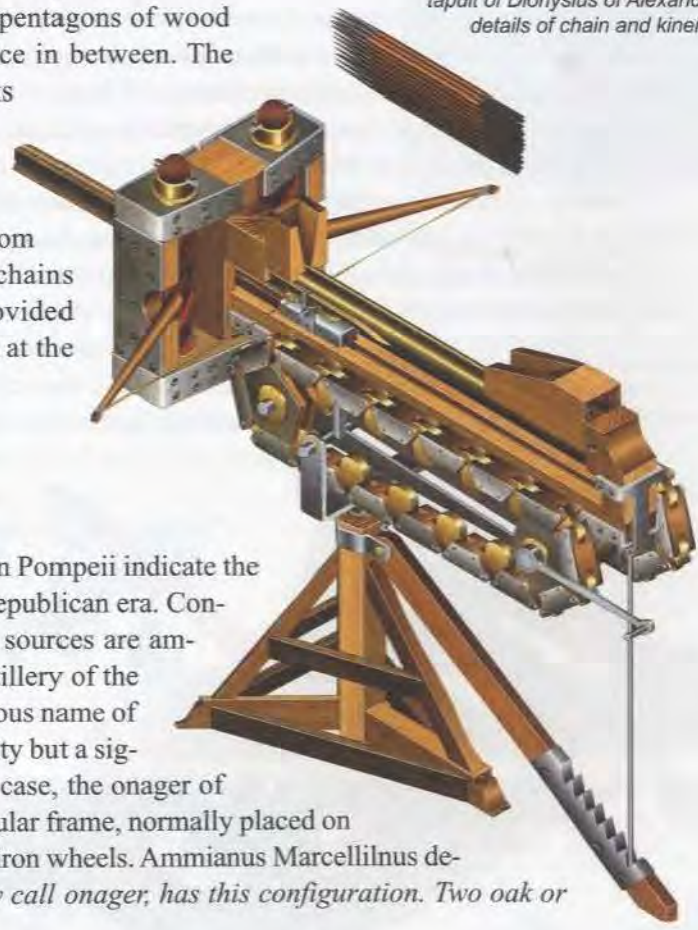
diameter of its coils was between Ø 51 mm and Ø 78 mm. It hurled darts of approximately 50 cm that probably tapered toward the tail so that the vanes, placed at intervals of 120°, did not protrude from the diameter of the shaft, like modern mortar projectiles. The dart magazine was hopper shaped, ending below with a slit that was a bit longer and wider than the dart, so that only one at a time could pass through the feeding cylinder, that rotated by 180° to drop the dart in front of the string. After it was fired, by continuing to rotate the motive levers, the guide hooked the string once again, fixed it to the release hook, pulling the string to tense and load it, until a second device released the hook and fired. The cycle continued automatically and without interruption.[29]



Dionysius' catapult did not have a loading winch to move the weapon. In its stead was a sophisticated chain device with identical links, of the type that will later be defined as regularised. This consisted of two pins located at the top and bottom of the shaft, with sprockets at both ends, the rear acting as motor and the front as return. The sprockets were two pentagons of wood covered with a metal plate, with an interstice in between. The chains consisted of a series of oak blocks covered in metal, the same length as the side of the pentagons and as wide as the related bodies. Their small connecting plates, called fins, protruded toward the bottom and entered the interstice, preventing the chains from protruding. The motive force was provided by activating the two winch handles located at the end of the motor axis.

Ricostruzione virtuale della catapulta a ripetizione di Dionisio di Alessandria ed in dettaglio la catena ed i cinematismi.

Virtual reconstruction of the repeat catapult of Dionysius of Alexandria and details of chain and kinematics.



The Mortar of the Legions

Some remarks by Philon and traces found in Pompeii indicate the existence of single arm artillery during the Republican era. Concerning the chronology of such artillery the sources are ambiguous: for some they were the principal artillery of the legions around IV A.D. century, with the curious name of onagri; for others this was not an actual novelty but a significant improvement. Whatever may be the case, the onager of the Imperial Era consisted of a robust rectangular frame, normally placed on the ground and frequently provided with four iron wheels. Ammianus Marcellilnus described it thusly:"*The scorpion, that we now call onager, has this configuration. Two oak or*

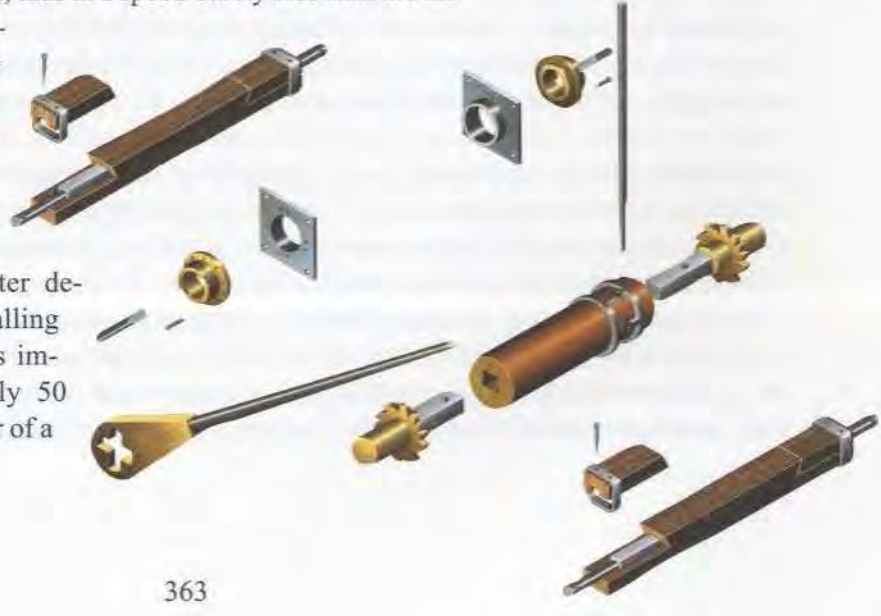
helm beams, shaped so that they appear to have a slight hump; they are then joined in the same manner as the tool used to saw and, after making large holes in both beams, strong ropes are passed within to connect the machine and prevent it from breaking. From the centre of these [ropes] a wood shaft rises in an oblique direction, straight as the rudder of a cart, so wound in the skins of strings as to make it impossible to lift or lower it; at its upper end are iron hooks, from which hangs a sling of rope or iron. On the opposite side of the wooden arm is a large sack made of rough goatskin, stuffed with cut straw, knotted tightly and placed [together with the weapon] on a pile of clods of earth or a pile of bricks. Such a mass, positioned on a compact wall of stone quickly breaks it and not because of its weight but because of its vibrations.

When combat is engaged, a round ball is placed in the sling; four robust young men, situated on both sides, inversely rotate the shaft to which the ropes are affixed, dragging the arm backward, almost to a horizontal level. At this point, the firing director, from the height of his position, activates the handle that controls the entire weapons and releases it with a strong blow of the mallet: released from the constraint the arm springs forward and after hurling the stone, that will break through any obstacle, strikes the soft goatskin sack. This is also called torment as any of its actions occur by torsion; but it is also called scorpion, as in the rear it has a sort of erect sting; recently, however, it was nicknamed wild ass, [onager] because when that animal is chased by hunters, it hurls stones by kicking backward so violently as to fracture even the cranium and bones of its pursuers."[30]

Ricostruzione virtuale dell'onagro descritto da Ammiano Marcellino e scomposizione del verricello, di cui si è rinvenuto un reperto a Pompei.

Virtual reconstruction of the onager described by Ammiano Marcellino and sectional view of winch. Relics of the winch have been unearthed in Pompeii.

The onager which 'requires a reinforced platform, is fired according to a precise sequence that begins with the slow lowering of the arm by means of a hoist. When it has reached its maximum inclination and the ball placed in the sling, the restraint is removed and the coil drags it violently in rotation. After describing an arc of approximately 40° the sling opens, freeing the ball and hurling it in a parabolic trajectory. The arm, on the other hand, is arrested on a special padding. By reaction to the impact, the rear of the machine lifts, falling heavily to the ground: a curious movement that resembles the kicking of onagers. More interesting yet is to try to understand why, from a certain time on, it became the siege artillery par excellence, remaining such for the entire Middle Ages. Because of its strongly parabolic trajectory, the impact occurred at the end of the fall, thus at a speed barely less than the initial one, as if the weapon were in direct contact with the target. Since the speed depended on the difference in level between the vertex of the parabola and the height of the target, by positioning the weapon higher than the target, the kinetic energy was greater, causing greater destruction. Very generally, a ball falling from a height of a hundred meters impacts at a speed of approximately 50 m/sec, higher that the residual power of a



mid-distance ballista. The consequences however were very different as the angle of incidence was almost perpendicular and the targets, mostly of wood, struck horizontally. In other words, the greatest force was released against the least structural resistance, with easily understandable consequences. The ball broke through those slim diaphragms and fell inside: often it also broke through the floors of the houses below, causing them to collapse. The effects of such weapons were horrific especially when using incendiary projectiles at night. Use of the onager did not end with the fall of the Empire: the sling became a large scoop, transforming it into the Medieval catapult, the catapult par excellence!

Individual Defensive Armament

Obviously, whatever may have been the entity and the size of the activities performed by the legionnaires in the civilian context, their primary purpose was and remained combat and war. Thus if courage and aggressiveness were as essential to legions as technical ability was to artisans, appropriate armament was as crucial to the former as tools to the latter. And like the tools, weapons also underwent changes and improvements over time, partly through cultural progress, partly by changing tactics and, especially, by differentiation based on the environmental context. For example, a mountainous and thickly wooded territory would not require the same armament as a flat and barren desert scenario. As for the evolution of knowledge in this sector, the Romans always boasted of improving the best that they found in the enemy armament of the time - increased confrontations and different enemies thus increasing the range of suggestions and derivations. At the time of the reforms of Augustus the new army was perfectly equipped for its tasks, with weapons and equipment that had been tested and evaluated. Such premised, we must make a preliminary distinction between passive defensive armament, and active offensive armament, which is in turn to be distinguished into individual and collective as well as close engagement and distance engagement using launch weapons. The underlying criteria of defensive armament is very elementary, as it simply meant protecting the body from blunt and penetrating impact, by a hard and leathery shell. Since this protection could not be extended uninterruptedly to the entire body it was segmented into sections, differing in size and resistance, according to the vulnerability and vitality of the organs it was protecting.

The greatest attention was given to the head and the chest; a bit less to the stomach and less still to the legs, except when they wore greaves; minimal protection was provided for the feet by simple but robust shoes; almost nothing for the right arm, so as not to impede movement, while the left arm was almost completely covered by a shield. The result was a more effective panoply, one that was meticulous and logical, and perhaps even lighter than the ancient hoplite one as it did not have to sheathe a static warrior but a highly mobile one, as was required for close engagement. The shield was considered separately as it not only had to protect the individual but often the group as well, when for example it had to assume a testudo, or tortoise, configuration, or in preparing for a cavalry charge. The shield could be defined as a modular reinforcement element carried by each soldier.

Whatever the panoply, once all the soldiers were in uniform it became indispensable to have some means to identify the wearer and especially his rank within the hierarchy. In other words, from the epic Homerian brawl to manoeuvred confrontation, where orders followed each other with frequency, it was necessary for the different armours to have some conventional diversities. Only in this manner, even when the panoply was reduced to only a few pieces, was it possible to identify the commanders and to follow their orders. Since the helmet was the most visible part of an individual in a mass of combatants, these emblems were concentrated on the helmet, an expedient that still exists today though greatly, and purposely, less obvious. In this regard, it is interesting to note that it was the Romans who progressively reduced the lavishness of these signs

as they had verified the counterindications of excessive visibility on the battlefield.[31] Generally, the defensive armament of the late Republican Era, also used by the Imperial army, consisted of three elements: the helmet, the cuirass or breastplate and the shield.

HELMET

The first and most basic element of the defensive armament was unquestionably the helmet. The legionnaires wore it in almost all circumstances, even when not in combat, as we can see from the numerous depictions. Like any protective element worn above the body and thus highly visible, it does not surprise that it was the focus of numerous munificent ornaments, such as incisions, plumes, the skin of wild animals and hierarchical emblems, often represented by the specific placement of crests and feathers. But many of these ornaments apply more to the parade helmet rather than the combat helmet, which was the result of technical research intended to increase its solidity, optimal ergonomy and wearability.

While in the Republican Era they often used the robust Corinthian bronze helmet, excellent in a phalanx confrontation but dangerous for individual combat as it did not allow for a suitable visual field, around the end of the era they opted for a very different helmet. This was a head covering, also made of bronze, but with a small rear projection to protect the nape of the neck, called gronda, and two mobile protections for the cheeks, called cheek-guards. The first bronze helmets, certainly mass produced and of moderate cost, appeared in the Marian era and were defined by the specialists of the sector as the Montefortino C model. These were crested helmets with a plume and a horsehair tail on a single crest, similar to our modern corazzieri. As far as we know they remained in use until the I century A.D.

Elmi di tipo corinzio: reperto, raffigurazione vascolare e ricostruzioni.

Corinthian helmets: relic, illustration on vase and reconstruction.

In the Augustan Era:"*the Coolus helmet made its first appearance in the Roman army. The curve of this model followed the natural shape of the skull and had a wider brim than the Montefortino version. The curvature is of Gallic origin and the oldest example of this type was found in the region of the Marne. The Roman version is certainly improved by a front reinforcement, or brim, that protected the front of the skull from direct hits. The first Roman Coolus, model C helmets did not have a crest, contrary to all following versions.*"[32] Model E, based on a relic found in Walbrook also had, in addition to the central crest for the horsetail, two small tubes on the side to insert feathers. We do not know if these ornaments were a distinguishing mark of the unit or rank. During the first half of the I century the brim became wider and thicker. In particular:"*the two helmets discovered in a field in Haltern were used around 9 B.C. until the site was abandoned around the year 9 of our era. The first, in bronze, is an evolution of the Italian helmet (first Republican, then Buggenum): the nape-shield [the rim a.n.]is more developed than previously and forms a right angle with the skull-cap, the conical api-*

cal button no longer appears in the exemplars of this series. More important, it seems that there was a frontal reinforcement to protect the skull from blows inflicted directly from top to bottom. The eponymous helmet of this series, discovered in Drusenheim (lower Rhine), has two side tubes used to insert feathers vertically, one on each side. The cheek-guards, still on the helmet found in Schaan (Switzerland), are relatively large, with two semi-circular openings on the front, one for the eyes and the other for the mouth.

The other Haltern helmet was made of iron and was similar in form though the material used required some adaptation. It had a very evolved cap, almost cylindrical at the base, with a perpendicular nape guard (or slightly inclined, as required). From two to four grooves, in the shape of a fin or eyebrow, reinforce the cap in front. These technical adaptations made it possible, thanks to the skill of the ironmongers who made the helmets, to avoid replacing the front reinforcement, something that appears to have been required frequently. Some early specimens like the Mainz - Weisenau helmet,or the Besançon helmet, have an extremely detailed adornment: they used all the colours that issue from the use of different metals and materials (iron, red copper, brass, silver), as well as enamel and even coral."[33]

Of course the iron helmets did not completely replace the bronze ones, apparently because their production remained very limited. According to some sources, it seems that a fairly large shop could not produce more than half a dozen a month! A helmet of different shape and make, the cassis, was used by the cavalry, and even Julius Caesar did not neglect to distinguish it from the helmet of the infantry, called the *galea*. These helmets evolved even further and in the I c. A.D. they have among their most curious characteristics a cap that reproduces human hair, ears and, not infrequently, on the cheek-guards, even a beard! Structurally they had a rather low brim set almost orthogonally into the rear base of the helmet.[34]

Nella pagina a fianco dall'alto: elmo di tipo Montefortino, di Mannhei, di Hagenau.
In questa pagina dall'alto a sinistra: elmi tipo Niedebieder e quindi tipo Weisenau.

Page to side, from the top: Montefortino, Mannhei and Hagenau helmet.
On this page, from top, left: Niedebieder and Weisenau helmets.

The first dual-metal helmets for horsemen also appeared during the Imperial Era, made of iron covered in bronze or silver plate. Without doubt one of the most beautiful of these specimens was found in 1986 in a gravel bank near Xanten and is currently on display in the Bonn Museum. This is an iron helmet covered in embossed silver plate carefully worked and gilded.[35] A curious complement of this knight's helmet, perhaps used exclusively for parades, was the silver plated bronze mask that closed in the front: several have been found, in an excellent state of preservation.

There were also helmets used by the auxiliary infantry that were much simpler than those of the legionnaires. These were produced by a singular metallurgic process, consisting in a strong pressure to shape a metal disc, in this case of tempered bronze, on a matrix of hard wood that was made to rotate by a machine that resembled a lathe.[36] Doubtless the power required to move the 'lathe' could only be provided by hydraulic wheels that the Romans had already been using in their industry, as confirmed by the large columns made by a lathe or the marble slabs cut using hydraulic saws, mentioned by Statius in his *Mosella*.[37]

Very few helmets made after the I century have been found to date: of these only two have been identified with certainty, dating to the first half of the II century A.D. Both are made of iron, one found in *Brigetio*, Hungary and the other in a grotto in Hebron, Israel.[38] The primary novelties of the former are the even larger brim and the presence of studs, even on the cheek-guards. The supports for the crest appear to be completely absent but may have been removed at a later date. Beginning perhaps in the II century, the ancient crest ornament, extending from front to rear for simple legionnaires and side to side for the centurions, disappeared completely or was rapidly disappearing. As for the second helmet, although it seems to have been made differently, it is of similar quality and probably one of a series.[39]

Regarding the III century, there is an interesting helmet that is considered a late variant of the Wiesenau type, with a cap reinforced by two crossed strips, an apical crest, a solid visor, upper guards for the ears, no cheek-guards and a very wide brim set at a 45° angle to the rear cylindrical body of the helmet. The presence of five parallel stiffening ribs emphasizes the need for a greater rigidity, giving it a strong defensive capability. This is implicit proof of the barbarians' different method of combat, perhaps using launch weapons.[40] What archaeology was not able to return to us because of their ephemeral duration are the interior coverings of the helmets. In the majority of cases these were made of leather, fabric or felt applied by small rivets.

The Cuirass

Impronte, resti e ricostruzioni di calzature romane.
Corazza anatomica: statue e ricostruzione.
Prints, remains and reconstructions of Roman footwear.
Anatomic cuirass: statues and reconstruction..

As remarked by several experts, the numerous films on the Roman military have discredited and made famous an anatomic leather cuirass for legionnaires, one that in reality has never existed. Leather was certainly used but only for the *pteruges*, the strips that hung from the mail link corset or tunic, made of bronze flakes or iron plates. Strips that formed a sort of skirt characteristic of Roman legionnaires, and that had a very bland protective function. Another systematic use of leather was for shoes, better known as *galigae*, and made with a strong hobnailed sole and a complicated series of straps and laces that wound the foot and ankle as in our modern tall sandals. Open shoes that allowed for effective circulation of air, a healthy posture of the foot and, at the same time, a good grip, even on ice, thanks to the hobnails.[41]

The cuirass or breastplate, used to protect the chest and shoulders, had numerous versions over time and often even at the same time. One detailed description provides the following information:"*except for the segmented cuirass, the cuirasses used by the Roman army at the beginning of the principate evolved only marginally in respect of those of the Republican Era. The senior officers continued to use the muscolata [anatomic] cuirass, of which the most decorated models had to be forged for exceptional occasions... These are doubtless the cuirasses, adorned in gold and silver, described in the Notizia dignitatum listing the Imperial factories of the late Empire. It is paradoxical that this model, the most frequently reproduced on statues, is in reality the rarest as no specimen has been found.*"[42]

There were many types of cuirasses, but the first, was a coat of mail(*cotta*), was made of scales that the Romans called *lorica squamata*. In the east it had already been in use during the Bronze Age, while the Greeks used it only occasionally and sporadically. Unknown to the Celts, it was used by the Roman auxiliary units in the beginning of the Imperial Era, as testified by numerous archaeological findings dating to

between the I and the IV century. Obviously no specimen of this type of cuirass has come down to us complete, and its conservation was limited to a more or less significant number of scales. However, the study even of these fragments alone confirms that it was easily made and repaired when damaged, as the process was almost the same, except for the proportions, as repairing tiles. The scales, of course, where not always the same shape and size, though they were approximately rectangular, measuring about 1-2 cm in width and 2-3 cm high, with three straight sides and a rounded base overlying the scale underneath. In several cases the scales were also made convex, just like tiles.

A bronze wire was used to assemble them by threading it through two holes and then folded over. Every row was fixed to a fabric support, probably a strong canvass such as the one used for sails or light chamois leather. Another method of assembling them was to block the scales one to the other, without any support underneath, as some relics have revealed, a solution that greatly reduced mobility. According to the bas-reliefs, the most reliable iconic source, there were two types of scaled cuirass, one for infantrymen and one for the cavalry, the latter being longer. In both cases the coat of mail made of scales does not seem to have been greatly appreciated as it provided little protection. Its greatest advantage was exclusively economical as it did not require any particular skills or specialised labour to make.

Another type of cuirass was the coat of mail made of iron links, defined by the Romans as *humata*. Its presence was ascertained as early as the V century B.C. According to some sources, the Romans learned of it through the Gallic Celts, reputed to be its inventor. Whatever the origin, it was adopted by the legionnaires around the II century B.C., as deduced from several monuments. In these we note the progressive lengthening of the upper section of the coat of mail, a direct consequence of its evolution and the systems used to put it on over the chest. It also appears that the

Romans used two different types of reinforcements for the shoulders, one similar to the linen padding used in Greek cuirasses and the other resembling a short mantle, perhaps of Celtic origin.[43] In its original form, the latter did not require a leather support, but the Greek version did, otherwise it would have been simply a set of useless strips. It was rather complicated to make as the links were made separately and then had to be joined one by one. To give an idea of the work required, it should be noted that they started with a rod made slightly thinner by various hot passages in a draw-plate. Then when:"*the wire was sufficiently long, it was wound around a spindle and its spires cut with a scalpel to achieve the links that the maker of chain mail then joined one to the other ... [Their] extremities were then flattened so that they could be locked together. Finally a senior worker or master builder hammered them sealed. The coats of mail were then shaped with great care according to the body because, like all personal suits of armour, it to had to 'fit well and be sufficiently comfortable to wear in combat.*"[44] Slight progress was made with the forging of the links but this still did not eliminate the need for fastening. Recent calculations have determined that the weight of such a coat of mail was around 7-8 kg, with understandable difficulties for the wearer.

From a defensive aspect, neither the cuirass made of scales nor the one made of links, doubtless effective in neutralizing downward blows and even the impact of arrows at low speed, protected from the impact of blunt projectiles. Since such cuirasses were flexible, like a meshwork, they could not neutralize the impact of slings and small calibre ballistas discharging their lethal power against the body! This may explain the Romans' preference for a cuirass of steel plates that embraced the chest and shoulders, veritable

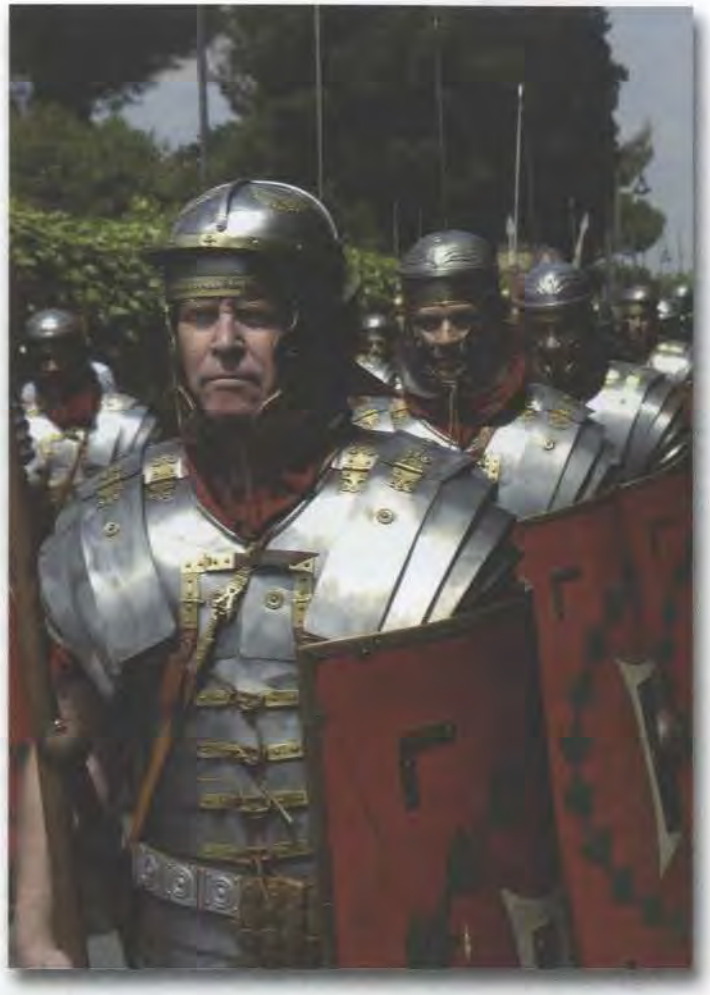
armour -plating. The most widely used, at least during the first Imperial Era, was the well known cuirass of superimposed iron plates, also called segmented armour. Chronologically, its advent coincides with the reign of Tiberius and is, for many scholars, a consequence of the defeat of Teutoburger. According to these sources a great number of legionnaires had to be re-armed, very rapidly and at minimal expense: the blade cuirass fulfilled both needs. In reality, although one can understand the reason behind the speed and the cost of re-armament of some legions following their tragic defeat, the new cuirasses had other advantages that may perhaps be attributable to that massacre, as they provided much better passive protection. Unlike the scale cuirass and the link coat of mail, the blade cuirass is a uniquely Roman invention that could have been inspired by the gladiators. Gladiators had been using a plate protection that was very resistant to blows inflicted by a penetrating weapons, such as a spear or trident or by blunt weapons like a stick or cudgel. The wide division of the plates also permitted greater movement, ideal for combat.

From a strictly defensive aspect the cuirass made of metal plates is more beneficial that the one made of links, and was more effective, as the wide surface of the plates allowed the residual power of the impact to spread over a larger section of the body and considerably attenuated the impact. The same may be said for the cleaving weapons that could not manage to break the plates. This type of cuirass was the precursor of medieval armour, though still allowing for a moderate mobility thanks to the accurate articulations, especially around the shoulders.[45]

These:"*highly flexible cuirasses, were probably the first protections to use metal plates [although] the idea of using plates to make defensive arm-guards was already known to the Greeks ... We know that the cuirass classified now as Corbridge A was widely used at the time in which Emperor Claudius ordered the invasion of Britannia in 43 A.D., and the recent discovery of a shoulder-plate that seems to belong to the model B in the site of the logistical invasion base of the Legio II Augusta, in Chichester, suggests that the second of the Corbridge models had also been in use for some time.*

Hundreds of fragments of these cuirasses were found in all sites occupied by legionnaires and numerous attempts have been made to make a complete reconstruction, but it was only after the excavations of 1964, on the site of the Roman base of Corstopitum (Corbridge), near Hadrian's Wall, that the true aspect and structure of these cuirasses was made known."[46]

In this case, an iron basket was unearthed, containing numerous cuirass plates, among which were two entire systems dating to the I-II century A.D. Much simpler to make and lighter than the scale or link mail-armour by at least a third, the blade cuirass was widely used in spite of the inconveniences connected with the great number of straps and ties required to wear them. There were in fact many difficulties that were only gradually overcome, inherent to the fragility of the bindings and the poor quality of the metal plates and we must wait until the end of the I century to finally have a product of optimal quality. Some of these defects were attributable to the weakness of the joints, the inevitable deterioration of the leather supports exposed to harsh weather and the tendency to rust, making maintenance difficult. The complex nature of its assembly was proven by a recent archaeological finding that finally revealed all its phases and peculiarities. In particular, the fragment found near the fortress of *Trimnontium*, today's Newstead, in Scotland, thus the name *Newstead model*, turned out to be robust and perfectly functional. This is also the model that appears most frequently on the Trajan Column.[47]



Lorica segmentata: ricostruzione grafica e materiale.

Segmented cuirass: graphic and material reconstruction.

The Shield

The shield is considered the primary defensive element par excellence and beginning with the Marian reforms a special model was developed, called scutum, that was covered entirely in leather with the exception of a central hole for the boss. This was a sort of rounded metal stud, measuring approximately one palm in diameter, convex toward the exterior and concave internally, placed near a transversal bar: this gave the hand a stable

and ergonomic grip. The bosses differed as they could be of iron or bronze, semi conical or semispherical in shape, with or without a ferrule, with a rather wide connecting flange, etc.. This variety allows us to identify with an acceptable approximation the era of the shield and where it was used, even though no intact or nearly intact specimen has come down to us.

As far as can be deduced from the various literary and iconic sources, a new model of shield appeared during the Augustan era, soon becoming widely used throughout the army. Its origin may have been Celtic, where it was made using a single thick layer of wood. The Roman version, however, had different layers and: "*the introduction of a lateral curve would have required the use of a primitive form of plywood ... the original version had two layers of wood glued together and covered by fabric or leather, while the upper and lower extremities were edged in iron. The shields used during Caesar's time were probably very similar to the one discovered in Kask el Harit, in Egypt and is known as 'Fayum's Scutum'. This specimen, the only one discovered so far of the first type, was made of three strips of wood and was covered in wool felt ... Like many of the oval shields of the period, this specimen has ribbing or 'spines' in the front, a characteristic found on Roman shields up to the end of the I c. B.C.*

It was probably during the second half of that century that the scutum began to evolve into a semi-cylindrical form."[48] The upper and lower curves were eliminated, also reducing the overall weight by internal ribbing and reinforcements. The final form was achieved around the middle of the same century, and remained practically unaltered for the following three hundred years. Apart from this model, which could almost be defined as the regulation shield, there were probably other types, especially within the auxiliary units, of oval shape, as illustrated on the Trajan Column. The fact that a round shield was also used during the late Empire, one that was

Bassorieli con scudi, umboni di scutum, scudo del Fayum e resti della bordatura metallica.
Bas-reliefs with shields scutum bosses, Fayum shield and the remains of metal border.

almost a compromise between the two, seems to confirm that both had positive and negative elements to be overcome. However:"*whatever their form, the shields at the beginning of the principate made wide use of metal reinforcements, at times for the side rims and to protect the boss. On the rectangular shield this central piece has a semispherical shape, often affixed to a metal plate made to adhere to the curve of the shield. The most beautiful specimen of this type, currently in the British Museum, was discovered in the Tyne River; it still bears the emblem (the bull) and the etched name of the Legio VIII Augusta, as well as the name of its owner... The bosses on these shields are generally simpler, and at times are a simple semispherical bulge; the peculiar curve of the legionnaires' shields, glued in inverse layers distinguishes them from the model used by the auxiliaries.*"[49]

The external surface of the shields was covered by a thick coat of paint, forming pictures and writing and varying from unit to unit. This novelty, which may appear to be a simple concession to aesthetics, was actually intended to protect them from the water. When they were exposed to heavy rain the glue dissolved and the wood was deformed, increasing in weight. In the forest of Teutoburger, for example, Varus' legionnaires, caught in a terrible storm found their shields had become useless, thus contributing to the tragedy. In conclusion, we can generalise by saying that the semi cylindrical and stratified shield was typical of the legionnaires, while the flat oval one was used by auxiliary troops. The round, hexagonal and other types of shields were used by the cavalry.

Offensive Armament

Offensive armament was the principal equipment for every army, in any historical context, as, in the final analysis, this was their raison d'être. As already mentioned, there was individual and collective offensive armament, used for close combat or for launching as well as pointed, cutting and blunt weapons. As we have already provided an ample description of collective launch weapons, the range is

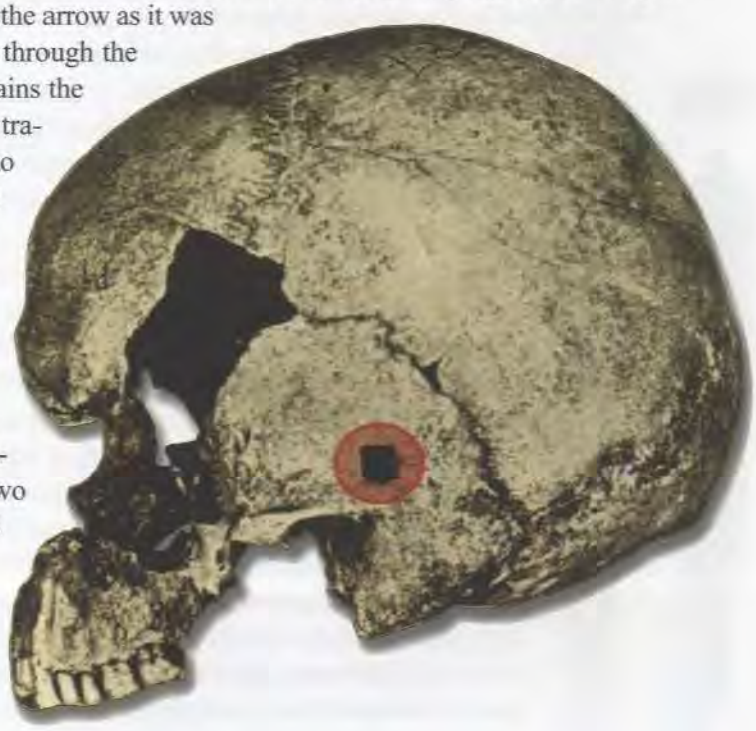
Ricostruzioni di scudo romano ed esercitazione.
Reconstructions of a roman shield and exercise.

reduced to individual launching and cutting weapons. Using their range of action as guideline and remembering that, from a technical aspect, a weapon is something that strikes the enemy directly, a projectile rather than a propulsor, whether bow and arrow or cannon, we have the following order of launch weapons: the javelin in all its different versions, darts, shots; those used for close combat included: gladius, sword and dagger. Since we have already described the pilum and the *hasta* in detail, there remain only the slings and arches.

Arches and Slings

The ability to hurl arrows or stones goes back to the earliest of times, but to trace to origins of instruments, or propulsors, that could throw such items in a less approximate manner than a curved branch or a whirling rope, we need go no further than the VIII millennium B.C. According to some scholars, during that uncertain period in Central Asia, or immediately after according to others, there are justified reasons to believe that the archetypes of the sling and the bow were in common use. From these areas they migrated to the West over the following centuries, slowly reaching even the Near East.

This stated, to describe the ballistic difference between the propulsors used to throw darts and those used for stones, it should be noted that their respective physical launch criteria are clearly different. Penetrating projectiles, whose effects are similar to the piercing of canine teeth, were fired by a linear acceleration provided by a curved lamina, called an arch, which then returned to its initial configuration. Blunt projectiles on the other hand are similar to the impact of a fist, and were fired by a centrifugal acceleration provided by a rotating string, defined as *sling*. The ancients and the primitives, though ignoring the dynamics of the two different methods of launching, soon recognized their respective peculiarities and consequent limitations. To give an example, in attempting to strike a target with a stone, whether by hand after a rapid rotation of the arm or the more whirling rotation of a sling, an indirect aim was needed, one requiring a precise analogic calculation. It was a wholly different matter for the arrow as it was shot directly toward the visible target, looking through the tail and the tip. This schematic description explains the scrupulous attention given to regularizing the trajectory of the darts. The empennage located to the rear was perfectly suited to the purpose and ensured the target was always struck straight on, an indispensable condition of effectiveness. Easy to imagine how insignificant the result of the impact would have been if it had taken place transversally! Nothing like the act of throwing stones, whose damaging results were not effected by the direction or the angle of impact. But the principal difference between the two types of projectiles is in their respective initial speeds, upon which depended the range, the mass being equal. And since arrows were always lighter than stones, for many millenniums they represented the maximum offensive range of all telekinetic weapons.



The numerous interventions effected over time, both on the aerodynamic configuration of the darts and their balance, further increased their range, an evolution not possible for stones as long as they were launched with the bare hand. A bit more time was required to overcome this ballistic problem, and the invention of the sling. Although arch and sling can be considered more or less of the same era, a theory not supported by material evidence because of the total deterioration of any specimens, and both are capable of hurling a projectile weighing a few dozen grams at a distance of roughly a hundred meters, the former underwent significant improvements and wartime uses compared to the latter, whose only improvement was the adoption of lead projectiles in the shape of an almond, called *missile shots*, on which not infrequently was imprinted the name of the legion using them. The Romans never became experts either in firing the sling or the arch, leaving this skill to specialized auxiliary units, such as the slingsmen of the Balearics or the Syrian archers, often with extraordinary tactical results.

Ghiande per fionda e, nella pagina a fianco, palle di balista.
Shots for slings and, next page, ballista projectiles.

The Gladius

Even the gladius, the legionnaire weapon par excellence, underwent significant evolutions between the Republican Era and the Imperial Era. Strangely enough very few specimens have been found for a blade that was produced in the hundreds of thousands and only a couple unearthed in the populated cities of Herculaneum and Pompeii. Its basic characteristics are as follows: length of the blade around sixty centimetres and width approximately 1/10, with a tapered point and two moderately sharp side edges. A pointed weapon that the legionnaires were trained to handle, as confirmed by Flavius Renatus Vegetius:"*the recruits, in particular, were trained to strike with the point rather than the cutting side, a technique with which the Romans not only easily defeated the enemy but also taunted them.*

Even if a cleaving blow is inflicted with great vigour, it often does not succeed in killing, as the vital parts of the body are always adequately protected by the armour and by the bones themselves. But if it penetrates the flesh by two ounces [≈5 cm], it causes fatal injuries if it touches vital organs. Also, if the combatant tries to strike from the side, he exposes his arm and right flank while if he attacks with the point he maintains the protection of the entire body and the enemy is killed without being able to defend himself.

It is confirmed that the Romans in battle used this type of blow."[50]

The gladius evolved along with the progress in metalwork, and the changing combat techniques. In particular, if between the III and the II B.C. it appears short and sharp, perfect for striking in thrusts, in the following century it became a weapon with two cutting edges and a strong tip, ideal to sustain and to inflict cuts and sharp thrusts.[51] From the constructive aspect it consisted of a blade, a hilt and a scabbard. The hilt had three parts: the guard, indented below and covered in bronze; the hilt, usually made of bone, horn or hard wood and,

Reperto e ricostruzione di gladio romano.
Remains and reconstruction of Roman gladius.

rarely, of ivory; the handle was large and spherical or lentiform, this too often made of hard wood like the scabbard. The hilt was usually anatomic, with four grooves for the fingers, to provide a strong grip. A specimen of a gladius, in good condition, was found in 1986 in a home in Delos. The blade:"*about 76 cm long, has a long sharp point and two parallel cutting edges; nothing remains of the hilt, doubtless of wood like the pommel, at the end of which are seven iron rivets. When the sword was abandoned it was in a leather sheath ' stretched taught between two borders of rounded iron', separated by two small transversal iron bars. Although no chain element was found, the suspension system is certainly preserved: it consisted of four links fixed to the two transversal bars in the upper part of the sheath.*"[52]

At the top of the links were two forked straps, fixed to the belt, called cingulum militare. This was intended to distribute the weight of the cuirass along the sides and used to support the sword and the knife but also another lightly protective item: the cinctorium - a fringe made of strips, each of which supported a number of metal discs. It was no longer than the skirt and its width was a palm at the most.

Other blades approximately 76-75 cm long have been found in the last few years, always in less than ideal states of preservation but basically confirming the characteristics of the gladius as described. In conclusion, the gladius evolved from the era of the Marian reforms to the era of Augustus becoming progressively shorter and sharper.

Dagger

Like the gladius, the dagger also, or pugio, is believed to be of Spanish origin and was part of the regulation weapons of the legionnaires. However, it often appears to be even too refined, indicating that it may have been more of an ornament than a combat weapon. Like the gladius, the dagger also was hung on the belt, but on the right side, as it was used much less frequently that the former. The weapon itself was approximately 35 cm long and 6 wide, with a central ribbing. Not infrequently it was:"*adorned with silver or gold decorations, inlays of red enamel on the sheath and at times on the hilt (Colchester Museum). It consisted of a central section that included the blade, the hilt and cheeks of horn applied to the two sides of the hilt, shaped later ...; a slim lamina of bronze or iron was then applied and fixed by rivets. The metal was the same as that of the sheath. The sheath was simply but effectively made: the main plate was folded on the sides and welded to a slim rear plate. The rings to hang the sheath to the belt were then attached with nails that pierced the side of the sheath and were then beaten closed. The dagger ceased being a regulation weapon at the end of the I sec. A.D.*"[53]

Enrolment and Selection

The recruitment that in ancient times was almost automatic, thanks to the great prestige enjoyed by the army, begins to be borne with increasing reluctance during the Imperial Era, especially by the allies. Conscription, which the Romans defined as *dilectus*, was carried out in each province by a high level functionary sent by the emperor, called *dilectator*, a person who was sometimes removed from this prestigious position for manifest corruption. This function was later performed by the governor of the province, independent of his rank, whether he was a procurator, imperial legate, propraetor or proconsul. During his mission an imposing escort accompanied the functionary, although research has confirmed that the contingent of recruits taken was rather small. A legion, for example, required an annual rotation of approximately 250

young men and considering the total number of legions, this meant little more than 6,000 men to be recruited throughout the Empire. Considering also that the number of auxiliaries was the same as that of legionnaires, thus also their needs, the total number rises to 12,000; integrating this number with the needs of the garrisons of Rome and the fleet, the number did not reach 20,000 men! A quantity to be taken from the entire Mediterranean basin, that at that time was probably not far from having a total population of one hundred million inhabitants, such a vast demographic base as to not have to create any difficulties.

Rievocazione di esercizi.
Re-enactement of exercises.

What was more significant was the dearth of volunteers who should instead have provided a number in excess of the need, given the potential for a career and the assured and increasing compensation. The reasons for such a reluctance are to be found in another characteristic of Roman military service: the strong selection effected by the review board, called the *probatio*.

In effect, the person enrolling, of an age between 17 and 20 years, had to be healthy and robust, of moderate height, but not less than 1.65 m for legionnaires and slightly less for auxiliaries, and also had to know, though in a rudimentary manner, Latin, in some cases even proving he knew how to read and write. Nothing extraordinary for our modern parameters, but considering that in Italy, even in 1861, approximately 72% of the male adult population and 84% of the females were illiterate, these requirements were very discriminatory. There was also the additional consideration of social origin. The individual had to be free as any slave who attempted to enrol would be punished by death, and of a fairly acceptable social level for non Romans. All this reduced the total number to such a point that not infrequently even Augustus had to recur to persons who, under normal conditions, would not be eligible for enrolment, such as freedmen. This occurred:"*the first time to protect the colonies near Illyria, the second time to protect the left shore of the Rhine; these were slaves that rich persons of both sexes had to provide, whom he had released and placed in the front lines, but did not allow them to mix with soldiers who were born free and did not give them the same weapons.*"[54]

Once the recruit, called *tiro*, was selected he was not considered a soldier in the true sense of the word. To become such to all effects, he had to be included in a special list, receive the *signaticum*, a sort of a metal plaque of recognition worn around the neck on a string, and finally he had to take an oath to faithfully serve the gods and the emperor. A more stringent selection procedure regarded the enrolment of centurions, and the chief centurion in particular. The condition that seemed to be the determining factor, at least during the

High Empire, was Italic origin and when the situation changed in the II century in favour of a provincial origin this is attributed to the void left in the legions by the Italics who at the time were attracted in great number to the garrisons of Rome. If the Italics were the primary recruits in the West in the I century, in the East they preferred those of Greek extraction, a premise for and encouragement toward local recruitment. Thus, whether we speak of centurions or legionnaires:"*the I century A.D. is the century of 'foreigners': in general, recruiters have difficulty in finding men; few provinces can find its defenders within its own ranks, and it seems normal to those in power to proceed to a certain mixing of the populations. But we must make a distinction between the two halves of the Mediterranean. In the West, that is, in the part of the Empire where they spoke Latin, the Italics prevailed, except for the natives of Latium, Etruria, Umbria and the old colonies who preferred to enrol in the praetorian and urban cohorts ... In the Eastern part of the Empire, where the language of the administration was Greek, the situation is different: in the I century, the soldiers normally come from this half of the Mediterranean basin; they are identified as 'Orientals'. And beginning in the era of Augustus though rarely, to tell the truth –they begin to recruit locally.*"[55]

The greater number of men available for recruitment in the eastern part of the Empire was also closely connected with its greater birth rate, while there was a progressive decrease of births in the West. There are many possible reasons for this difference, the first being the strong tendency toward Romanization in some of the peripheral provinces and their great desire to become fully part of the Empire, a possibility that was fully guaranteed by a military career.

Hierarchies and Careers

The hierarchy within the Roman army during the Imperial Era, placed the simple soldier, whether voluntary or conscripted, at the lowest level and the emperor at the highest level. The emperor had nominal supreme command of all the armed forces, such that all victories were attributed to him, even when he never appeared on the battlefield. According to Dionysius Cassius only the Roman emperor was entitled to enrol the army, accept payments of taxes, initiate war and stipulate peace, and to command in any place and time all the foreign auxiliary soldiers and the Roman legionnaires (56). However, since the emperor did not always possess adequate military skills, he was accompanied by a sort of general staff, whose leadership was held by the powerful praetorian prefect. In modern terms this function and rank may be considered as both prime minister and minister of defence, obviously within the limits that an absolutist regime permitted.

The stationing of various legions and auxiliary units throughout the provinces of the Empire, notwithstanding any system of communication and telecommunications that may have existed, made centralized command too slow, a deficiency that became tragically important with the increased pressure of the barbarians. The solution conceived was to establish an autonomous military command in every province, subordinating it to the corresponding governor, imperial legate or propraetor of senatorial rank. The senior functionary thus became the commander in chief of every provincial army, whatever its number. He was also responsible for maintaining public order, the administration of justice, vigilance of worship, tax collection and, especially, defence of the territory.

A true singularity of the Roman army concerns its hybrid hierarchical structure: although the senior ranks were not career military, they had sufficient military skills by reason of family education, contrary to those of lower ranks, from the centurion down. Not for this, however, would it be logical to conclude that the army:"*rested on the effectiveness of the soldiers and the centurions, a quality often exalted as opposed to the mediocrity of the senior echelons who were supposedly incompetent amateurs: the victories were*

achieved by the troops, in a sense in spite of the presence of their superiors. This is a cliché to be rejected. Every son of a senator or knight possessed in his library treatises on the art of war, and dedicated himself regularly to training: these readings and this training were part of the education of every young man of good family. Since the military techniques of the time were not excessively complex, a few weeks of training in actual command were sufficient for them to assimilate the essentials ..."[57]

Further down, command of a single legion was given to another propraetor imperial legate, the *Legatus Legionis*, under the leadership of the governor. When it was a single legion, the two functions were performed by the same functionary. The title was used by Julius Caesar to designate the officers in charge of each legion and only under Augustus did it become a permanent appointment recognized by the institutions. From the practical aspect legates were chosen from among the men loyal to the emperor and thus from among the ex quaestors. A service appreciated and valued by the sovereign was the premise to aspire to the position of consul or provincial governor. Appointment as *Legatus Legionis* lasted an average of two or three years and envisaged the satisfactory administration of the life of the legion and related auxiliary units, with a constant surveillance of discipline and exercises. To this end, the functionary had a moderate financial and judicial autonomy, somewhat resembling that of his direct superior.

Immediately under him, and second in the hierarchy of the legion, was the *Tribunus Laticlavius*, whose strange name issues from the large red band that adorned the border of his toga, a mark of senatorial dignity. He had a small general staff that assisted him in his role as counsellor, was entrusted with military and judicial authority and oversaw the performance of the exercises. He was usually very young, about twenty years old, but this was not reason to exempt him from holding important positions in the absence of the legate, an absence that not infrequently was due to death on the battle field: in such case he assumed the title of *tribunus prolegato*.

Third in the hierarchical order was the camp praefect, Praefectus Castrorum, responsible for control of the camps and, by technical similarity, the direction of siege engines during campaigns. He was also responsible for selecting the sites in which to pitch camp, of whatever type, its fortification and the management of the order of march, the wagons, the baggage and the artillery, which he also commanded during battles. Because of the importance of the rank he was always present for the decisions of the legate's general staff. Before holding this rank he had held at least three tribunates in Rome and an assignment as chief centurion, distinctions that scholars believe were sufficient to ensure his entry into the equestrian order.

There followed five Augustinian tribunes, *Tribunes Angusticlavi*, a name taken from the narrow red band along the border of their toga to indicate their membership in the equestrian order, though of an inferior rank. In battle, each tribune had two cohorts of approximately 1,000 men under their command. They too took part in the meetings of the legionnaire general staff and presided over the exercises; they also oversaw the food provisions, administered justice and inspected the field hospital. In addition to the above ranks there were others, less common and lasting, who played only a marginal role.

Bassorilievo con legionari suonatori e rievocazioni.
Bas-relief with legionnaire musicians and rievocazioni.

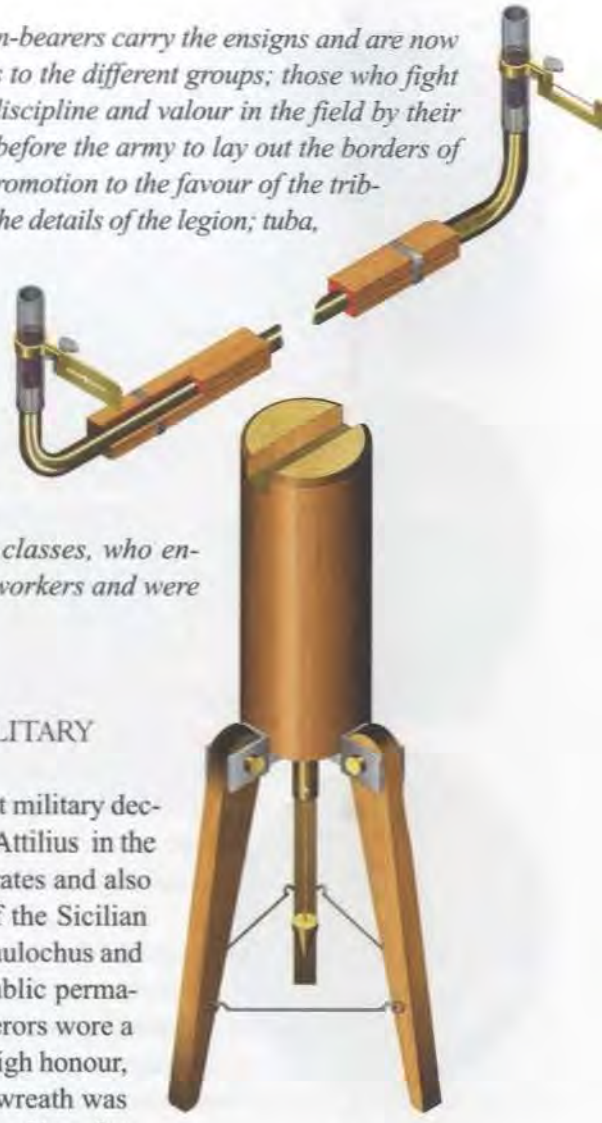
As for the praetorian fleets - it would be incorrect to define them as wartime navies - they were under the command of praefects of the equestrian order, with the praefect of Miseno the most prominent. They received 100,000 sesterces a year in the I century, increased to 200,000 in the following century. Under their command was a subpraefect and a chief of the arsenal, who received 60,000 sesterces a year. The praefects of the fleet in Germany, Britannia and other provinces, only received half that amount.

Regarding the actual career military, not to be confused with our current non commissioned officers, their highest rank was that of centurion. As each cohort consisted of six centuries there were also six centurions, not all of equal rank, but according to the following order: *pilus prior, princeps prior, hastatus prior, pilus posterior, princeps posterior, hastatus posterior*. In the first cohort, of a size double that of the others, instead of a *pilus prior*, there was a *primus pilus*, who took part in the meetings of the legionnaire general staff and commanded his century and the entire cohort.

Each centurion was assisted by an aide, or *optio*, who served not less than twenty years and earned his rank either through valour on the field or because he was already graded and thus by a sort of career advancement, although this was very gradual. Leadership of the centurionate, the *primus pilus*, led the way to many further career possibilities, from field praefecture to command of an auxiliary unit or even command of a unit from the garrison in Rome. The legionnaires, who at first glance may initially appear to be equal, also had a diversification within their ranks. Thanks to Vegetius we have a detailed description of the situation during the High empire:"*The eagle bearers and the image bearers are those who carry the eagles and the images of the Emperor; the optiones are senior subaltern officers who are selected by their supe-*

riors to do their duty in the case of sickness or absence; the ensign-bearers carry the ensigns and are now called dragonarii. The tesserari deliver the parole and the orders to the different groups; those who fight at the head of the legions are called campigeni, for they ensure discipline and valour in the field by their example. From meta, limit, is taken the name metatores, who go before the army to lay out the borders of the encampment; the beneficiarii are so named for owing their promotion to the favour of the tribunes; from liber, is taken the name of librarii, those who record all the details of the legion; tuba, trumpet, biccina (sic), horn, cornu, cornet, gives the name to those who play these different instruments and are called tubicines, buccinatores (sic), cornicines. The armoure duplares are soldiers skilled in the use of the sword and so receive double provisions, and armoure simplares, those who receive only one: the mensores mark out the ground for the tents or assign quarters in the city ... There were also, according to the rations, double candidates and single candidates awaiting advancement.

These were the principal soldiers or officers of the different classes, who enjoyed all the prerogatives of their rank. The others were called workers and were obliged to every kind of military work"[58]



Awards and Recompense of the Roman Military

Although Rome was never a true naval power, one of its highest military decorations was the *corona navale* (naval crown), awarded to Caius Attilius in the First Punic War, to Marcus Varro for his struggle against the pirates and also to Marcus Agrippa in 36 B.C., for the victorious conclusion of the Sicilian war. Augustus conferred it upon him after the great success at Naulochus and authorised him by special decree of the Senate to wear it in public permanently, especially on official occasions, when the regular conquerors wore a laurel wreath, to emphasize his pre-eminence.[59] Apart from the high honour, the actual wearing must have been rather uncomfortable as the wreath was a golden diadem decorated with the rostrum of the battle ships. Very few will receive it in the following years of the Empire and to correctly assess its importance and all its decorations we must remember that Augustus, imitated in this by the majority of his successors:"*for reasons of opportunity, did not like to exaggerate in granting military honours. «As military recompense he was more likely to award phalerea and necklaces and gold or silver objects rather than military crowns or mural crowns, that were a much higher honour; these he conferred with great parsimony ... »*"[60]

Sopra: la livella di Erone.
Sotto: moneta con corona navale

Above: the level of Hero.
Below: coin with naval crown

Regarding awards and decorations, these were not granted indiscriminately to soldiers who distinguished themselves in particularly heroic or brilliant actions. All the emperors, well aware of the significant difference between a recompense for valour and one that was a simple homage to loyalty or nobility, never confused the two. Thus:"*the decorations were highly varied. The basic difference was between those conferred to non-graded military and those for officers. The former were usually awarded only as a recompense for a particular un-*

dertaking (ob virtutem), as evidenced by an inscription found in the vicinity of Torino in honour of «Lucius Celio, son of Quinto, decorated for his courage (ob virtutes [sic]) with phalerea, collars and bracelets » (plaques that were very similar to our modern medals were called phalerea). Furthermore, the simple soldier could only receive... the three recompenses listed in the above cited inscription... Exceptionally, they could receive distinctions that were generally reserved to those of a higher rank, crowns... Officers however are not normally recompensed for their courage, but simply for their participation in the campaign (even the civil wars allowed them, in certain cases, to receive decorations). They are entitled to crowns, spears(mettere in latino) and to cavalry emblems which number, never rigidly fixed, varies according to three criteria. First, his place in the hierarchy: the higher the rank the more honours he will receive. Then there appear to be two levels, for each rank, and here personal merit probably plays a part. Finally, there are chronological distinctions, as some emperors, like Trajan, were more generous than others, such as Marcus Aurelius."[61]

Falere e loro applicazion sulla corazza.
Phalarea and their applications on cuirasses.

In the final analysis, we may justly maintain that, while awards were similar to our decorations for valour, and as such rewarded those who had distinguished themselves in the battlefield, recompenses were simple recognitions of service, a bit like the modern ribbons worn on uniforms. Although both were appreciated and desired, only the former signified a heroic military conduct, arousing respect and admiration. We know that some emperors who received them, to what extent they were merited it is impossible to ascertain, even had them reproduced on their palaces!

It was a different matter for the recompenses, lacking any military value but having great market value as they were usually heavy gold and silver pieces. Plates of gold, armillae and chains of gold, of varied weight and value indicating the generosity of the emperor and the social importance of the receiver. These were worn for official occasions and special circumstances when they wished to display their power.

Since these financial recompenses were of a value proportionate to the rank and grade of the receiver, in the end they were equated and even identified with him. Thus though it might appear to us to be a ludicrous vanity, the most senior officers would often appear in grand uniform, wearing round their neck several strings of heavy gold chains and gold bracelets in the forms of serpents round their wrists. As for rings, at least officially, the heavy, gold ones were a prerogative and exclusive distinction of the equestrian class! Such an abundance of gold coins made the highest military ranks so embellished resemble *soubrettes* of variety shows, especially to those who were not familiar with such awards and decorations, and that would be a very erroneous and superficial judgment! These gold bracelets are probably the precursors of the modern gold ribbons worn on the sleeves of uniforms, as the chains are for the collars of cavalry orders and the rings representative of prestigious military academies!

Punishments

The opposite of the decorations, both personal and collective, were the punishments, also personal and collective. Although the legionnaires were always considered first and foremost Roman citizens, displaying self-confidence in respect of their superiors and a certain autonomy of conduct, during combat and in marching, they were obligated to absolute and immediate obedience: non-compliance with this obligation lead to draconian penalties and not infrequently to death. Even Augustus was intransigent in this regard to the point that, according to Suetonius, when:"*the X Legion obeyed with an attitude of intolerance, he dismissed it with ignominy and, when others demanded retirement with excessive insistence, he let them go without giving them any recompense for their service. Once that some cohorts had fled, he had them decimated and then fed them barley ... [and when] some centurions deserted and abandoned their post, he punished them with death, like simple soldiers and for other offences, inflicted various infamous penalties, condemning them for example to remain for an entire day in front of the general's tent, at times dressed in a simple tunic, without belt, at times holding a ten-foot pole or even a clump of earth.*"[62]

This schematic report reveals the ample range of punishments used by the Roman army, without getting into details or delineating the principal punishments that could only be listed by category. Punishments went from the personal and purely ethical such as doubling the guard shift for a legionnaire guilty of light offences to passing the night outside of the camp, which, although not serious in itself did in some cases lead to death when the enemy was in the vicinity. Other punishments envisaged a reduction of rations, beatings with the staff carried by all centurions and that they did not hesitate to use, even on Roman citizens who were otherwise immune. Nor was there a lack of monetary punishment implemented by reducing pay, reductions in rank or transfers to auxiliary units. There was also the not infrequent capital punishment, both individual for cowardice or desertion, and collective when the entire unit was guilty of the same crimes, in the form of decimation. In this case, one man was taken from every ten legionnaires and brought before the firing squad.

Military Medical Care

If cowardice before the enemy implied capital punishment, a heroic conduct, often proven by serious injuries, led to cure and treatment to save lives, at least within the limits of their medical knowledge. This was not simply because they wished to recognise those less fortunate who had fully done their duty, but was also the result of an intelligent calculation. At the time, a situation that remained unchanged almost up to the middle of the XIX century, the slaughter of combat was followed by the even more tragic carnage and death of those who had been wounded in the field. It was impossible to help the injured as there was no specific structure for this purpose and often the number of the injured was greater than that of the survivors. Death came slowly in those terrible slaughterhouses, by dehydration or frost-bite, by infection or loss of blood, when not inflicted by plunderers. Thus we can safely say that the real fear of combatants was not death but the possibility of being injured and dying in the field.

The availability of a military medical service tasked with retrieving the wounded and perhaps curing them, increased aggression by decreasing this fear. If we add the consequences of the numerous epidemics contracted in areas and contexts of little or no hygiene and adverse weather conditions that could afflict thousands of men from the same camp, one can understand why so

much importance was placed on general hygiene and medical care in particular and the logic underlying the presence of medical personnel within the legions.

From a hierarchical perspective:"*physicians were equated with specialised non commissioned officers and came under the praefectus castrorum and a chief of medicine who, for example, during the Dacian wars, was Crito, the personal physician of the emperor Trajan.*

Since he had such a specialized function, the medicus was among the immunes and could officially marry even during active service. He was equipped and armed like the other soldiers and his pay was double that of the simple soldier: in the Domitian era he received 300 dinars, raised to 500 in the Servian era."[63]

From an operational aspect, assistance to the wounded was divided into two stages: the first directly on the battle field, reserved to the less seriously injured and aimed at their imme- diate care. Remedies at the time went from suturing wounds to reducing fractures and at times even stopping haemorrhages. For this purpose the doctor had a special surgical kit containing instruments and tools, as well as bandages and liniments. The professional skills that the almost permanent state of war permitted to refine significantly within a few years allowed them to save a great number of men even with only these simple interventions, although the great majority of the wounded did not survive. The same results in caring for the wounded on the field will not be achieved until the First World War!

The second phase included recovery, and this implied the construction of the forerunners of hospitals, obviously military ones as there was no civilian equivalent until the Middle Ages. They were called *valetidinarium in castris*, or base hospital or camp hospital: of these we have numerous archaeological relics, in particular at *Castra Vetera*. The hospital was a square masonry building measuring approximately 80 m per side: inside there was room for almost 200 sick and injured. One wing was dedicated to surgery with a special operating room. There was of course also a kitchen, pantry, baths and latrines. We should also remember that thanks to the experience they received in the field, when they retired military physicians usually went to work for some municipality without great difficulties and with a regular salary or opened their own office and earned a discreet living.

Cost of the Army

Often, when we read works on the crisis and fall of the Western Roman Empire, one of the causes explicitly referred to is the intolerable expense of the military apparatus. A condition that began to become obvious during the High Empire. In reality, however, we cannot determine, except in very general terms, to what extent the cost of the military actually influenced the collapse of the Empire. "*The statement by Heiclheim:«the army and the fleet, including the costs for assistance to veterans, were certainly the most conspicuous expense items in the budget of the Empire. It is in this sector that have been attempted the most reliable assessments », is in no way proven, as noted by Pekàry. A passage from Cassius Dio... seems to indicate that the army did not consume half of all the income; Macrinus in 217, criticised the financial policy of his predecessor Caracalla, accusing him of paying the barbarians an annual tribute equivalent to the annual wages. And since Caracalla on many other occasions seems to have had a policy of dissipation, military costs contributed, according to Pekàry, to less than 50% of the total, even considering the increase in wages for the soldiers decreed by this emperor*"[64]

But the situation is neither so simple nor so stable. Several calculations of military expenses in the era of Augustus have given a general result of approximately 100,000,000 dinars, equal to 400,000,000 sesterces, of which 32,000,000 for the wages of the legionnaires and approximately 59,500,000 for other military expenses, including provisions, equipment, transportation, wages for officers, etc. Viewed in these terms what is described is not far removed from reality, but a thorough study provides a different reading that, in many respects, appears much more logical. Thus:"*once admitted, it would mean that, in substance, military expenses were, at the time of Tiberius, almost equal to government income and in the Vespasian era, abundantly more than half of the entire budget of the Roman state. This would indicate that as early as the era of Augustus the Roman State existed practically as a function of the army and subordinated to the army all other functions of the State ...*"[65]

There is, however, one observation to be made regarding this totalizing role of the army, at least in respect of the budget: would it have been possible for the empire to survive or even to be formed without it? And how much of the revenue, even in the expectation of a crisis, was actually war booty from the various military operations? In other words in the cost benefit scale, the ratio seems to change in the course of time, possibly increasing, but its basic components do not!

Notes

1 - These were S. Sulpicio Galba, M. Salvio Otone, A. Vitellio, F.Vespasiano. The period between the first and the last extended from the summer of 68 to the summer of 69.

2 - An eloquent visual evocation of Trajan's conquest of Dacia is documented on the 114 panels on the Trajan Column. See L. ROSSI, *Rotocalchi di pietra*, Milan 1981, pp. 85-200.

3 - G. CLEMENTE, *La 'Notitia Dignitatum'*, in *Saggi di storia e letteratura*, n°4, Cagliari 1968.

4 - F. RUSSO, *Ingegno...*, cit., vol. I, pp. 269-271; also cf. S. QUILICI GIGLI, *Roma fuori le mura*, Rome 1980, pp.96-106. The dimensions of the great cistern are 1436 sq.m., 13 m high, with a storage capacity of approx. 10,000 cm.

5 - J. BELOCH, *Campania*, reprint Naples 1989, p.231. The *Piscina Mirabilis* is 1750 sq.m., 15 m high, with a storage capacity of 12,000 cm.

6 - On the rescue mission to save the inhabitants of the coastline of Mt. Vesuvius, conducted by Pliny the Elder, in which he heroically lost his life, cf. F. RUSSO, *79 d.C. Rotta su Pompei. Indagine sulla scomparsa di un ammiraglio*, reprint Naples 2006.

7 - Gaius Suetonius Tranquillus, *Le vite dei dodici Cesari*, bk IV, XLVI, reprint Milan 1972, vol. II, pp.203-205. The translation:"*after posting the army on the shores of the Ocean with crossbows and engines, while no one knew or could imagine what he was about to do, he gave the order to collect shells and to fill their helmets and clothing with them ...*"

8 - Data extrapolated from Y. LE BOHEC, *L'esercito romano*, Urbino 2001, pp. 44-46.

9 - On the biography of Flavius Josephus cf. F. JOSEPHUS, *La guerra giudaica,* edited by G.Viticci, Verona 1978, vol. I, pp. IX-XXX.

10 - Quotation of Flavius Josephus taken from J. WACHER, *Il mondo di Roma imperiale*, Bari 1989, p. 110.

11 - Pseudo HYGINUS, *De munitionibus castrorum,*

12 - J. WACHER, *Il mondo...*, cit. pp. 112-113.

13 - Quotation of ARRIANO, *Periplo del Ponto Eusino,* IX, 3, taken from Y. LE BOHEC, *L'esercito...*, cit., p. 210.

14 - Y. LE BOHEC, *L'esercito...*, cit., p. 212.

15 - See F. RUSSO, *La difesa delegata,* Roma 1995, pp. 45-51.

16 - F. RUSSO, *Tormenta. Venti secoli di artiglieria meccanica*, Rome 2002, vol. I, pp. 165-255. Also,

a more tecnica description by the same author, *L'artiglieria delle Legioni romane,* Rome, 2004.

17 - E. N. LUTTWAK, *La grande strategia dell'impero romano, dal I al III secolo d.C.*, Milan 1981, p. 183.

18 - E. N. LUTTWAK, *La grande strategia...*, cit., pp. 87 and foll.

19 - E. N. LUTTWAK, *La grande strategia...*, cit., p. 95.

20 - E. N. LUTTWAK, *La grande strategia...*, cit., p. 93.

21 - E. N. LUTTWAK, *La grande strategia...*, cit., p. 94

22 - F. R.VEGETIUS, *L'arte militare*, bk III, 5: così il testo: *"Aliquanti in castellorum, aut urbium turribus appendunt trabes: quibus aliquando erectis, aliquando depositis indicant quae geruntur."*

23 - PLINY THE ELDER, *Storia Naturale*, bk II, 73:*"Multis hoc cognitum experimentis in Africa Hispaniaque turrium Hannibalis, in Asia vero propter piraticos terrores simili specularum presidio excitato, in quis preanuntios ignes sexta hora diei accensos saepe compertum est termia noctis a tergo ultimis visos."*

24 - Diff. Authors, *Le trasmissioni dell'Esercito*, RomE 1995, pp. 5-14. Phrase from AENEAS THE TACTICIAN, *Poliorketika*, bk X, 44.

25 - On the speed of ballista projectiles F. RUSSO, *Tormenta...*, cit., pp. 253-255.

26 - Re Hatra cf. AMMIANUS MARCELLINUS, *Storie*, bk XXIV, 4, 28, edited by G. Viansino, Milan 2002.

27 - For further study cf. F. RUSSO, F. RUSSO, *Tormenta navalia. Le artiglierie navali romane*, supplement to Maritime Review n°6, June 2007, pp. 106-117.

28 - Philo's text on the pneumatic ballista is found in his *Belopoica,* published and translated into English by E.W. MARSDEN, *Greek and roman artillery. Technical treatises*, New York 1971, pp. 106 and foll.

29 - On the repeat catapult cf. F. RUSSO, F. RUSSO, *Tormenta navalia...*, cit., pp. 135-155.

30 - AMMIANO MARCELLINO, *Storie...*, cit., bk XXV, 8, 5.

31 - Concerning the use of the forerunners of camouflage uniforms, G. S. FABBRI, *Armamenti individuali. La forza d'urto della fanteria di marina*, in *I porti antichi di Ravenna*, Ravenna 2005, p. 170 writes:" we know of special classiari units embarked as part of the crew on *naves exploratoriae* (small craft used to maintain communication between larger ships at sea and as forward guard of the naval group) dressed in blue to mimic the colour of the sea, thus completing the camouflage effect of the ship, also painted blue..."

32 - M. SIMKINS, *L'esercito romano da Adriano a Costantino*, Madrid 1999, p. 17.

33 - M. FEUGERE, *Les armes des Romains de la République à l'Antiquité tardive*, Paris 2002, p. 120, translation by A.

34 - M. FEUGERE, *Les armes...*, cit., p. 18.

35 - M. FEUGERE, *Les armes...*, cit., p. 181.

36 - M. SIMKINS, *L'esercito romano...*, cit., p. 20.

37 - D. MAGNO AUSONIO, *Mosella.* The poet probably lived between 310 and 395.

38 - M. FEUGERE, *Les armes...*, cit., p. 181 and foll.

39 - Id.

40 - Id.

41 - Id.

42 - M. FEUGERE, *Les armes...*, cit., p. 181, trans by A.

43 - M. SIMKINS, *L'esercito romano...*, cit., p. 14.

44 - W. REID, *La scienza delle armi dall'età della pietra ai nostri giorni*, Milan 1979, pp. 60- 62.

45 - M. FEUGERE, *Les armes...*, cit., p. 129.

46 - M. SIMKINS, *L'esercito romano...*, cit., p. 15.

47 - M. SIMKINS, *L'esercito romano...*, cit., p. 16.

48 - M. SIMKINS, *L'esercito romano...*, cit., p. 22.

49 - M. FEUGERE, *Les armes...*, cit., p. 115, trans by A.

50 - A. ANGELINI, *L'arte militare di Flavio Renato Vegezio,* Roma 1984, bk I, 12, p. 19.

51 - C. BLAIR, *Enciclopedia ragionata delle armi*, Verona 1979, p. 235 under *gladio*,

52 - M. FEUGERE, *Les armes...*, cit., p. 98, trans by A.

53 - M. SIMKINS, *L'esercito romano...*, cit., p. 24.

54 - CAIUS SUETONIUS TRANQUILLUS, *Le vite...*, cit., *Augusto,* XXV, 2.

55 - Y. LE BOHEC, *L'esercito...*, cit., p. 105.

56 - CASSIUS DIO, *Storia di Roma,* LIII, 17.

57 - Y. LE BOHEC, *L'esercito...*, cit., p. 50.

58 - Y. LE BOHEC, *L'esercito...*, cit., p. 61.

59 - D. CARRO, *Classica. Storia della marina di Roma.Testimonianze dall'antichità*, sec. Ed., supplement to the Maritime Review n° 12, Rome 2000, vol. VIII, p. 138-140.

60 - C. SVETONIO TRANQUILLO, *Le vite...*, cit., *Augusto,* XXV, 2.

61 - Y. LE BOHEC, *L'esercito...*, cit., pp. 80-81.

62 - Y. LE BOHEC, *L'esercito...*, cit., p. 79.

63 - A. M. LIBERATI, F. SILVERIO, *Legio. Storia dei soldati di Roma* , Rome 1992, p.111.

64 - M. MAZZA, *Lotte sociali e restaurazione autoritaria nel III secolo d.C.*, Bari 1973, p. 393.

65 - M. MAZZA, *Lotte sociali...*, cit., p. 395.

Part Five

The Legions of the Lower Empire

L'area sotto il controllo di Roma nel 305 d.C.
The area controller by Rome in 305 A.D.

The Legions of the Lower Empire

In his praetorium located in the camp on the shores of the river Heron, one of the left tributaries of the Danube in Slovakia, in the course of the campaign against the Quadi in 173, Emperor Marcus Aurelius (born in Rome 121, died in Vienna 180) wrote that he was grateful to his father for having given him the:"*ability defer his own will to that of others with a certain competence...*"[1] In spite of his profoundly pacifist nature Marcus Aurelius was forced not only to spend the greater part of his time in a military tent but also to enrol new legions and to personally take command of the army, frequently having to add even some supplementary troops. He also had to initiate the transformation of a military institution that no longer fulfilled the needs of the era. From a historical perspective, if Marcus Aurelius was not the true artifice of the renewal of the army, which will take place only under Diocletian, he was doubtless its greatest inspiration, for he was the first to become aware of the drastic changes in the geopolitical postures and related force relations and, by obvious consequence, of the need for a more suitable military instrument. His decrees have the common characteristic of reinforcing the forces available with new, smaller formations, more numerous and flexible while at the same time multiplying the fortified nodes.

It has been observed that:"*having developed an extensive system of border defence in the second century, the Roman response to the first serious enemy penetration of the Imperial territory, under Marcus Aurelius (166 ca.), was to increase and repair the existing defensive system. No 'flexible' defence or 'in depth' defence was adopted, rather the fortifications were reinforced and the number of garrisons along the more vulnerable frontiers increased; two new legions were created (the II Italica and the III Italica), and stationed respectively in Noricum and in Rhaetia, two provinces that until that time had not had any legionnaire presidiums. The basic border defence strategy was not abandoned even when, a century later, the first strategic reserve nucleus was cre-*

ated under the emperor Septimius Severus, on the contrary they continued to try to remedy deficiencies locally by building additional fortifications and new garrisons."[2] In effect, the initial response to an increased threat was simply a logical reinforcement of the system wherever it was weak, as the pressure of the barbarians along the frontiers was not yet generalised. It is logical to suppose that behind such actions were technicians of proven experience and this may explain Marcus Aurelius' comment relevant to knowing how to make use of the skills of others, without rancour and envy, referring to the counsellors he had to use to undertake that tremendous task in such critical circumstances.

That the circumstances were truly critical is confirmed by the numerous studies that view the Marcomannic wars of Marcus Aurelius, at least in the initial phase, as an attempt to frustrate the emergence of a Germanic threat, the prologue to a nightmare. The gravity of the situation is testified by some:"*countermeasures by the Romans. Tested commanders were sent to the limes of the Danube; among these was M. Valerius Maximianus... Marcus Aurelius auctioned his treasures to enrol new soldiers and fill the gaps left by the plague. Two new legions were formed... these were reinforced by the frontier garrisons... [and] new forces were called from a considerable distance, like the famous Legio X Fretensis, from Jerusalem (or at least a detachment) and it seems the Legio III Augusta from Africa, from Lambesi... As in the times of Hannibal, slaves and gladiators were enrolled, to fill the gaps in the units at the front... All the forces were activated; by the end of 169 one could begin to see some improvement; only then could the philosopher emperor begin the campaign. It had first been necessary to reorganize... [and] it was only in 171 that Marcus Aurelius will succeed in victoriously concluding the first phase of this painful war.*"[3]

As was easily foreseeable, that truce was ephemeral and the conflict was reignited a few years later. When the Romans finally began to glimpse the possibility of a positive conclusion, in 180 Marcus Aurelius died, almost certainly of the plague. His son Commodus did not continue his strategic plan, hurriedly stipulating a peace with the Germans. Perhaps he could not do otherwise, but this was the beginning of the catastrophe. Gibbon justly states that anyone: "*who would determine one period in the universal history in which the condition of men was the happiest and most prosperous, would without hesitation indicate the period from the death of Domitian to the advent of Commodus. The vast Roman Empire was governed by an absolute power, under the guidance of virtue and safety. The armies were controlled by the firm but moderate hand of four successive emperors whose character and authority imposed immediate respect. The forms of civil government were jealously guarded by Nerva, Trajan, Hadrian and the Antonini, who delighted in the image of freedom and were considered ministers responsible for the laws.*"[4] But that era, perhaps too idealized, concluded irreversibly with the death of Marcus Aurelius!

Many have indubitably viewed those terrible winter campaigns along the Danube as the apex of the grandeur of the Roman Empire and their cowardly conclusion as the prologue to its inexorable decline, more so as the Germans were only one, and not the worst, enemy of Rome. For the Persians were even then increasing pressure in the south, along the eastern frontier.

Commodo in veste di Ercole.
Nella pagina a fianco dall'alto: Nerva, Traiano ed Adriano.

Commodus as Hercules.
Side page, from the top: Nerva, Trajan and Hadrian.

The Ascent of Septimius Severus

Like Marcus Aurelius, prior to his proclamation as Emperor Septimius Severus had never conducted war operations. However, he did posses a a clear vision of military needs, a skill that will have extraordinary importance in his subsequent government action. Born in 146 in Leptis Magna, about a hundred kilometres from Tripoli, it appears that he became senator in 172 by the will of Marcus Aurelius. Under Commodus he attained the consulate and command of the legions in Pannonia, the same who acclaimed him emperor after the murder of Pertinax in 193. Obviously the legions of Syria preferred Pescennius Niger and those of Britannia, Clofio Albino, without considering the nomination of a fourth emperor, Didius Julianus. It took Septimius Severus almost four years to eliminate the three rivals, but in the end he was the absolute lord of the Empire.

Septimius Severus was a soldier by nature, so it is no surprise that one of his first actions was to support the military sector, one with which he was perfectly familiar and that he needed. Thus:"*because of gratitude, political misunderstanding and apparent need, Severus was induced to loosen the reins on military discipline. He flattered the vanity of the soldiers by granting them the honour of wearing a gold ring and allowed them to live in luxury in the hill sections with their wives. He increased their pay beyond any other past increment and accustomed them to expect and soon to demand, extraordinary gratuities for every occasion of danger... There is still a letter by Severus, in which he complains of the liberties of the army and exhorts his generals to begin the necessary reforms with the tribunes...*"[5]

This highly negative vision aside, in reality Septimius Severus initiated those reforms without delay, to the extent that he is now considered one of the great reformers:"*of the army, surely the second in importance after Augustus... The measures he took are inspired by a policy of awareness, directed against a Senate supported by the army. In dying, it appears he gave his sons a final advice: «Enrich the soldiers, and disregard the rest »...*

Some of the measures taken by Septimius Severus were intended only to improve the living conditions of the military. First, an increase in salary – the second after the sum determined by Augustus – re-established equilibrium between prices and income. Then meals were improved by organizing a military food office, with in-kind provisions sent directly to the army (contrary to the belief of some, it does not seem that a new tax was created). In addition, the soldiers were allowed to live with women, outside of the camp; it is incorrect to say that Septimius Severus granted the right to 'wed'."[6] As for the gold ring, this was something only the *principales* were allowed to wear, like the centurions who were allowed to wear white clothing, *albata decursio*. All these privileges and perhaps also some facilitation for promotions, seem to suggest something more than simple accommodation, or sensitivity, toward the military sector. They were rather incentives to undertake a military career and especially to enrolment, with possibilities of promotions never before contemplated!

Continuing the policy of rearmament initiated by Marcus Aurelius, Septimius Severus also in-

Septimius Severus: bust and fresco depicting him with his family.

stituted three new legions, called *Partiche*, according to their intended destination and whose total number increased the entire complement of the army by 10%. At the head of these legions he did not place legates of senatorial rank, as was the practice, but equestrian praefects, an option that suggests a precise political choice, since the cavalry was notoriously more loyal to the emperor. Also, by entrusting command of the increasingly important *vexillationes* to *duces* and *praepositi* from the upper echelons of the legions, there was a progressive separation of civilian and military power. These were doubtless presaging novelties of future consequences, as was his decision to station the *II Partica* to Albano, near Rome, where the remains of the camp are still visible. Another revolutionary initiative was the ignominious dismissal of the Praetorian Guard, with a humiliating ceremony. According to sources, after assembling its soldiers, completely disarmed, in a plain near the city, surrounded by the levelled spears of selected Illyrian legionnaires, they were declared traitors and obligated first to surrender their luxurious uniforms and then to remove themselves to a distance of not less than one hundred miles, while their barracks were occupied by another detachment, to prevent any surprise. A double order of ten cohorts, equivalent to three legions, plus a cavalry contingent taken from the Mauri replaced the praetorians.

Le rovine di Leptis Magna, Libia: in basso l'arco di Settimio Severo. Nella pagina a fianco: l'impero persiano nel IV sec. a.C.

The ruins of Leptis Magna, Libya: below, the arc of Septimius Severus. Side page: the Persian Empire in the IV c. B.C.

The Great Inflation

Such incisive reforms, complemented by munificent incentives and benefits and the creation of new legions that, added to those of Marcus Aurelius, amounted to a fifth of those already in existence, could not be implemented without a conspicuous financial reserve. Something that the State coffers did not have, nor was there any hope of attaining it by additional taxes. And so, pressed by increasingly urgent needs, Septimius Severus recurred to an administrative fraud. Along with the increasing pressure at the frontiers, this expedient was the second but perhaps more serious reason for the fall of the Empire. The emperor authorised the falsification of money, varying the percentage of gold and silver it contained: a sort of State forgery! Actually this was not a novelty for the era and it was a typical expedient in times of crisis, in fact: "*legislation against the falsifiers already existed in the Republican era; the first laws seem to go back to Marius: but it was Silla, in this as in other fields, who left a definite legislation. In the beginning of the III century, his Lex Cornelia is repeatedly remembered and cited; it was dealt with by Ulpian in his book de officio proconsolis and by Paolo, where it receives special attention in the Sententiae attributed to this distinguished jurist of the Severian era ... The legislation appears to be very severe: it contemplated the confiscation of assets and exile for falsifiers who were freeborn, death to those of servile origin; in a later era these punishments become even harsher (under Constantine, in 321); Constant II even inflicts capital punishment on forgers of non servile origin. The magnitude of the penalties confirms the extent of the phenomenon...*"[7]

In effect it is not simple:"*to fully understand and evaluate the initiative of the great Roman emperor. If it is all too easy to see its macroscopic effects, like inflation and the long term effects, such as the inevitable deterioration of the Imperial monetary system, it is more difficult to discern the economic logic upon which such an initiative, unconsciously or consciously, was taken... We must therefore make a distinction. There is no doubt that this provision to decrease the alloy value of the denarius meant immediate financial advantages for Septimius Severus; for with the alloy required for two "good" dinars, the Imperial mints could coin three of the "new" ones. Septimius Severus could not ignore these benefits. The financial situation he had inherited from his predecessors was, according sources, extremely serious: upon his accession the coffers of the State were practically empty.*"[8]

The immediate reasons for the measures he implemented were, for some scholars, the imminent war that Septimius Severus was preparing to undertake against the other candidates to the throne. But according to others, and this opinion seems to be more widely shared, the measure was taken to save the finances of the State and restart the entire economy, at the cost of an inflation that could be controlled. Thus:"*when Septimius Severus introduced new currency, distributing it to the classes with a fixed income, in the form of stipends to the bureaucracy and wages to the military, or used it for state works, this money was introduced into the production cycle, creating an offer of goods and stimulating productivity. Undoubtedly the Roman emperor... was not acting consciously when he caused this artificial inflation; but he was well aware that the money given to the soldiers would be reconverted into assets and goods, and, implicitly, into productivity; he also knew that the government initiatives it encouraged created new work and new need for labour: he intuited that by using the means at his disposal to control trust in the new assets put into circulation, he could avoid state bankruptcy and at the same time stimulate the production of new goods and services.*"[9]

And the results, at least up to a certain time, credit this second possibility:"*thus one can understand the economic paradox of the reign of Septimius Severus, during which time devaluation and an inflationist cycle generated an era of stability and economic prosperity. Nevertheless, this type of economic miracle is not destined to last very long without the necessary conditions. For the basis for such a*

monetary policy is that there exist the conditions to increase the short term volume of employment and production."[10] Many scholars believe that Septimius Severus' extravagant prodigality in respect of the military led to economic disaster. To further worsen the situation, the institution of the military food-office and its in-kind payment of taxes, ended up irremediably obstructing agricultural production. But the emperor, perhaps because of an instinctive and not otherwise explainable financial competence, succeeded in managing the crisis in a magisterial manner. In fact, according to the estimates we have, upon his death he left the State in a relatively flourishing condition! Cassius Dio, who first seriously studied his instructions, had no doubts in this regard stating without hesitation that:"*at least during his not brief period of reign Septimius Severus appears to have succeed in halting the situation and inverting the tendency: his complex and farsighted economic policy, one of unscrupulous though cautious state intervention that in many aspects resembles that... [of] Diocletian... seems to have succeeded in resolving the problem...*"[11]

In the final analysis this was the precursor of wartime economy, marked by the phenomenon of inflation and monetary devaluation but also by overall results that were not all negative, especially in the crucial role played by the army. Since the military were now a well to do class compared to the average inhabitants of the Empire, thanks to their fixed income, their presence alone:"*created an area of movable wealth; they were the motor, in the true sense of the term, for they started up a machine: on the one hand, the State took from the citizen to pay the soldiers; on the other, the same citizen recovered this money with the money spent by the army.*"[12] This particular economic system, along with the establishment of the large permanent bases of the High Empire, something that became a practice in the following centuries, progressively increased. Every large camp was also:"*an important market, and the civilians were aware of this... The provisioning of the camp was provided at first by an embryonic superintendence, then by the activation of what was called the military food-office... Weapons were another expense for the soldiers as, contrary to modern armies, they had to pay for them: in the I and II century every soldier paid for his own equipment, in the III century the State provided it, but then deducted the amount from their wages. They also had to pay for their uniforms, clothing and tents. In addition, the army used beasts of burden, oxen for ploughing the fields... mounts, horses and camels. And the soldiers behaved like any relatively well to do consumer...* [who] *made various purchases...*"[13]

In providing an eloquent quantitative report of the food consumed:"*it has been calculated,* [that] *on the average the provisions in wheat for a legion were approximately 500 gallons per week* [equal to approximately 2.4 cm, a.n..]... *the produce of no less than 20 acres of land in northern England. It should not be difficult to imagine the consequences on the economy of agriculturally and economically underdeveloped regions that had to provide food and supplies for groups of legions, or even one legion. It could be either a drain or a market that each year could requisition or buy the agricultural surplus of a large community...*"[14] It must also be noted however that if the legions had systematically requisitioned the surrounding agricultural products, within a very short time no farmer would have remained in their vicinity and, consequently, there would have been no harvest available. Logic thus favours the thesis of a large market that contributed substantially to the well-being of the surrounding areas. How else to explain the proliferation around the large camps of taverns, brothels and other structures whose sole purpose was to provide entertainment with actors, singers, dancers etc., all part of the system of monetary circulation triggered by the wages of the military, and all gravitating around the local food resources!

A brief digression regarding the military food-office, which transformed an extraordinary contribution into a regular tax. "*Originally, this was simply a supplementary contribution to the property tax, paid in kind with the products of the land and collected only occa-*

Due aurei con l'effigie di Settimio Severo ed una matrice per il conio.
Two aurei with the effigy of Septimus Severus and a matrix for the coin.

sionally, primarily during the passage of the emperor through the various provinces. However, during the III century, and especially under Septimius Severus, it was transformed into a regular tax collected in all provinces through a specific organisation; exceptional in the beginning, it became permanent in the course of a transformation that began in the final decades of the II century...[since perhaps] there already existed a certain organisation of the military food-office during the final years of Marcus Aurelius; it is highly probable that, beginning with the sojourn of Septimius Severus in Egypt (December 199) and his concession to this region of the municipal system, this organization became permanent, as had become permanent the state of war, and became similar to the other taxes ... on a fiscal level the food-office may be considered as «the image of the economic crisis that separated the Empire of the Antonins from the Empire of Theodosius ». The structuring of the food-office depended on the needs of the military as it was organised to meet these needs; but it evolved primarily during the monetary crisis that invested the Empire between the II and the III century and in accordance with the increasingly common practice of in-kind payments to the soldiers and the bureaucracy of the Empire. Initially, Septimius Severus viewed the food-office as a practical means to deal with his financial difficulties and with the expansion of public spending resulting from the increased size of the army."[15]

There is, however, one aspect of the large bases that is less known and perhaps more indicative in this regard: their productivity of a proto industrial or wholesale artisanship nature. Every fortress or large

base had laboratories or shops, in Latin *fabbrica*, whose function it was to produce the material and equipment that the legion and its various appurtenances required. They included bricks and tiles made in special ovens, lead pipes and bronze shut off valves, all marked with the seal and the number of the unit. These components were probably not destined solely for the base but found their way also into the civilian market, the more so as the military were exempt by an edict of Nero from paying taxes. In addition, the units were also responsible for cultivating the nearby lands, that they not infrequently also used as pasture for the beasts. At least one inscription tells of a contingent sent to mow the hay, with these words:"*vexillatio... ad fienum secandum.*"[16]

Septimius Severus ably exploited all these possibilities with new career incentives and new economic subsidies, prompting an increase in enrolment and improving morale and the fighting spirit. This he quickly exploited in his eastern campaigns, transformed into great military successes and because of the immense booty comparable to a river of gold, into great economic benefits. All of which greatly redeemed his monetary policy, as confirmed by the resumption of gold currency in 205, after the conquest of Ctesiphon in 198, something that had been suspended for some time.

The contribution of the Empire of Septimius Severus was, in the end and spite of all, that of having continued on the road of military reform, putting the men first, and of having restored to Rome a period of deterrence, albeit temporary, along the frontiers, with obvious economic effects. Not for this, however, was the general situation less critical, for in the meantime the barbarians had not remained passive but had begun a process that up to that time had been inconceivable - they began to unite, forming a coalition against Empire. The traditional policy of *divide and conquer* could now be considered on the decline, leading to tragic consequences.

The Action of Gallienus

The military reforms that Marcus Aurelius and Septimius Severus had initiated and brought forward, albeit intermittently and with great difficulties, found a new and determined believer in Publius Licinius Egnatius Gallienus. Born in Milan in 218, when his father Valerian was acclaimed emperor by the legion in 253 and confirmed by the Senate, he was brought to power by his father. It became increasingly obvious that such a vast empire, with so many enemies, needed more than one man to lead it. In this case there were two Augusti, two emperors of equal dignity: of these Valerian, the father, was approximately sixty years of age, and he assumed responsibility for the eastern section while his son Gallienus, just thirty-five, the western section. As reported by Gibbon:"*the joint government of father and son lasted approximately seven years, and that of Gallienus alone continued for another eight; but the entire era was an uninterrupted period of confusion and calamities as the Roman Empire was assailed on all sides by the blind furor of foreign invaders and the unleashed ambition of domestic usurpers ... the most dangerous enemies of Rome during the reign of Valerian and Gallienus were 1) the Francs, 2) the Germans, 3) the Goths and 4) the Persians. Under these generic names are included the actions of lesser tribes, whose obscure and barbarous names would only oppress memory...*"[17] To the north, absolutely nothing new except for the unification of

tribes, the worst of nightmares. The newly designated emperor increased defences, concentrating them in Treviri, *Augusta Treverorum* and Cologne. In the beginning of his reign Gallienus enjoyed some moderate successes, thanks especially to Postumus, one of his best generals, but the general incursions that continued during the two years of 257-258 drastically annulled any ill considered euphoria.

After crossing the Rhine, the Francs ravaged the Empire pushing all the way to Spain, where they sacked Tarragona and almost destroyed it. When there was nothing else to plunder they took the ships anchored in the ports and went on to devastate Mauritania. The Alamanni (*allmen*) on the other hand, crossed the Danube and the Rhaetian Alps heading for Milan, continuing through to Ravenna and on to Rome. An extreme pride instigated the Senate to assume responsibility for the defence, as the two emperors were involved in distant wars. A haphazardly gathered army was sufficient to dispel the barbarians of any illusion and, loaded with booty, they returned where they came from. But this was more of a non-defeat than a victory and it was only some time after that Gallienus truly succeeded in defeating them in Milan: however there continue to be well founded doubts regarding the actual significance of this episode! To prevent the repetition of such unfortunate incidents Gallienus formed a singular alliance with the king of the Marcomanni, marrying his daughter, a wedding that the arrogant patricians considered equivalent to concubinage. Gothic raids along the Danube were very frequent, at times reaching into Macedonia and Italy and were always repelled, probably during their re-entry phase, by the Roman forces. But when the objective became Asia Minor, a small fleet was sufficient to attack the Pontus and sack Tresibonda of an immense booty. There followed a second Gothic expedition with even worse results, with devastations in Asia Minor and Greece: in Athens it was a miracle that the grandiose library escaped the fire.

In the meantime, while Gallienus attempted to resolve these immense catastrophes, his father Valerian was fighting in Persia, where in spite of his now advanced age he attempted to defend the Euphrates. In 260, with the camp surrounded and the plague increasingly widespread, the unfortunate emperor was forced to surrender. According to tradition, when after a series of humiliations he finally died, his skin was dressed and filled with straw formed into a vague human shape. This macabre trophy remained for centuries in one of the most celebrated temples of Persia! The years that followed were a sequence of confrontations with diverse results, but of little overall importance until the murder of Gallienus, just outside his tent in 268, near Milan. Among his reforms is the interdiction for senators to undertake a military career or to assume any military appointment, a directive that dates to just after the senatorial initiative implemented to thrust back the Germans. The explanation is perfectly logical as it was intended to prevent the sharing of military power! And the senators wished for nothing more, as these responsibilities were too burdensome for them. Thus beginning in 260 he began to replace the:"*old legionnaire legates with professional officers, equestrian praefects like those in the Partiche legions, holding the title of «acting legates ». Officers of*

La Mauritania romana: Volubilis, Marocco. Rovine della città e dettaglio dell'arco di Caracalla.
Nella pagina a fianco: aureo di Valeriano ed arco di Gallieno a Roma.

Roman Mauritania: Volubilis, Morocco. Ruins of the city and details of the Arc of Caracalla.
Side page: Valerian aureus and arc of Gallienus in Rome.

the operational army, praetorian tribunes and even a centurion from a legionnaire detachment received the new title of «protector of the Emperor». The word protector had been used previously (to indicate legionnaires who acted as bodyguards), but following this innovation of Gallienus it would later indicate an important institution of the Late Empire..."[18]

From a strictly hierarchical perspective, prohibiting senators from assuming any military charge or mission meant the suppression of the laticlave legates and tribunes. From that time on the praefects of the camp found themselves in charge of the legions because of the simultaneous disappearance of the two higher ranks and the legions assumed a uniform formation, on the model of those stationed in Egypt or the three new Partiche legions. At the same time the governors of the provinces were also suppressed and replaced by praesides, of the equestrian rank, under whom were the praefects of the legion.

Gallienus, because of an improbable strategic competence or more likely a sensitivity developed after the death of his father, soon realized that the Empire could no longer be defended by a stable and rigid frontier, a cordon homogeneously presided by legions quartered in their fortresses. This concept consisted in a:"*regular distribution of the defence forces along the entire line of interception to cover the entire frontier in a uniform manner. It is doubtlessly true that when an enemy attacks a 'cordon' defence he has the advantage of having a high concentration of forces compared to defence troops distributed along the entire frontier (the advantage of all mobile columns attacking fronts that are tactically static): in this case the offensive, though numerically inferior ... can always attain a 'break-through' superiority localized in the point selected for the penetration.*"[19] Since a barrage cordon defence was no longer possible, both because of the decreased number of defence forces in respect of offensive ones, and because of the immensity of the frontiers, he adopted a solution that will become canonical in such cases: the opposing forces were concentrated only in some points, ready to intervene at a specific signal in the threatened zones. For such a solution to be successful from a defensive aspect, it was indispensable for the large bases to be greatly in the rear in order to encompass a wider section of the front. Which, however, implied that the interception forces had to be especially rapid to arrive in time and the surveillance network detailed and well connected.

Gallienus established new formations and improved existing ones about the end of the II century: these formations become a well trained and well armed strategic reserve force ready to intervene in the shortest time possible. He "*gave preference to the cavalry in tactics and strategy: in so doing, he suffered the consequences of the events of 252-253 and 259-260 (once the barbarians had penetrated the limes, they met no other resistance). The number of equites in the legion was increased from 120 to 176 men; the detachments were assigned to the equestrian praepositi, and the larger commands to the duces; new mounted units were created and the emperor increased the number of the old units of this type - the Dalmati and the Mauri, the promoti, the scutarii and the stablesiani. This evolution led to the birth of a mobile reserve located in a rear position in respect of the frontier; this strategic innovation was a small revolution. Nevertheless, the infantry continued to remain the 'queen of battles'.*"[20]

Leaving aside the still primary role of the infantry, there is no doubt that the role of the cavalry was being rapidly exalted. A medieval source credits Gallienus with the initiative of forming cavalry units, almost as if he wanted to radically change the concept of the Roman army as a traditional infantry force. In reality such units had already served under Trajan and Septimius Severus, though to a lesser extent, and contributed decisively to their victories. The true difference was in the dimension of Gallienus' units which were equivalent to an entire cavalry corps under the command of a single commander. Gold coins were coined in Milan to celebrate the event, exalting the role and the loyalty of the cavalry.[21] All traces of this formation, whose members were mostly of Dalmatian or Mauri origin, that is equites *Dalmatae* and *equites Mauri* defined indistinctly as *illirici*, were lost in the following century except for one

mention in which the horsemen stationed behind the *limes* of the IV century along the Danube and in the east were identified as *illirici*. They were accompanied by the *equites Promoti* and *equites Scutarii*, also called *illirici*: obvious to assume they all derived from a single *illirica* cavalry unit of significant size, enrolled among the Dalmati and the Mauri, in which there were also elements of the legionnaire cavalry, called *Promoti* and soldiers equipped with a *scutum*, or *Scutarii*. These different units were most likely the fragmented remains of the great cavalry formations assembled by Gallienus and disbanded after his death. As for the need for infantry reinforcements, the emperor followed the usual procedure of taking detachments and vexillationes from the frontier legions.

The New Model of Defence

Gallienus' conclusion regarding the absolute impracticability of a barrage defence, marked the end of forward defence and the adoption of rear defence. In both cases the primary task of the opposing forces was to intercept the enemy, destroy him if possible, or force him to retreat. But the analogies ended there, for if in the first context the operations took place beyond the border, in the second they took place inside. In other words, if in the past the damages and devastations did not concern the property and lives of the Romans, even when residing behind the frontiers, now the situation was inverted and all found themselves on the battle field. Civilian populations went from being potential victims of raids as the enemy broke through the defence, to designated the victims of all incursions, large or small. And as the confrontation was not immediate, even when the defence forces connected with the enemy and perhaps succeeded in putting him to flight, these ground battles caused immense damages. At that point the increasingly rare victory did not greatly differ from defeat! From a strictly tactical perspective rear defence took enemy penetration for granted, trusting more in fortifications to contain damages and save

what they could. The result was that cities, towns, villages, isolated farms and even bridges, granaries and wells were protected by heavy defensive structures, to keep the barbarians at bay.[22]

It comes as no surprise that Gallienus' rear and flexible defence was particularly opposed by the landowner class who saw their immense properties and estates located behind the limes annihilated economically even before they could be devastated by the barbarians! This certain and impending encumbrance made them less valuable as it placed in doubt not only their survival but also the income from their harvests. The fortification of rustic villas that beginning in the III century became increasingly systematic and stronger was essential, to guarantee only the life of those living and working there, but certainly not the harvests or the animals. With the passage of time, the civilian fortification came more and more to resemble military fortifications and the workers similar in turn to the military. Those who did not adapt to the change soon had to abandon their farms and their villas to seek refuge in the city. In the meantime, the cities also were changing, year after year, at first only those immediately behind the frontiers then progressively all the others, cancelling the original architecture. The open city, with wide piazzas, roads, theatres, amphitheatres and basilicas soon became a nostalgic memory.

As if such were not enough, during that same historical period piracy reappeared, or perhaps it only became more feared, a sign that even the repressive force of the Imperial navies had become greatly weakened. A symbolic case in this regard occurred during the reign of Probus: a group of Francs deported to the shores of the Black Sea eluded surveillance and, after stealing some boats, crossed the Dardanelles and sailed into the Mediterranean, stopping periodically to loot and resupply. In 275:"*having plundered Greece and Asia, and sailed along the coast wreaking havoc along all the shores of Africa, they finally took Syracuse, once celebrated for its naval victories; after a very long voyage, they entered the Ocean where it penetrates the land [the Columns of Hercules], such a rash gesture demonstrating that no land was inaccessible to the desperation of the pirates [«piraticae»], if it can be reached by ships [«navigiis»]*"[23] During the interminable voyage no Roman warship, either eastern or western, intercepted them or dared to.

The New Urban Model

Many Roman cities in the era of Augustus, or immediately after, whatever their distance from the *limes*, had the welcome addition of a city wall, such as in *Saepinum*, not far from the mythical *Bojanum* of the Samnites, over the (sheep-)track of Puglia. The city was enclosed in a magnificent turreted circle of walls graciously provided by Tiberius. Although it is considered military architecture, this great structure did not have any specific defensive purpose, at least in the beginning. It was, like the majority of similar structures, intended to exalt municipal pride while also keeping brigands at bay, but absolutely useless to resist a siege attack. The situation changed drastically after the great incursions of the III century, especially after the adoption of rear defence in the provinces behind the *limes* as did

the typical features of perimeter fortifications that from that time on were frenetically erected around the cities.

Thus:"*as soon as the frontiers ceased to be an effective 'barrage' defence, there emerged the need to defend the assets that existed in situ, on a local scale and with local forces. As the roads were made safer by the construction of road fortifications, it also became necessary to protect anything of value that would otherwise be exposed to attack and destruction in the inevitable interval between enemy penetration and victorious interception by the various 'in depth' defences ... Next to the cities of the west without defence and whose lack of masonry enclosures proved, at least up to the III century, their prosperity and safety, there had always existed also fortified cities. In the East, wall defences were standard as the limes were 'open'. But in the West also some cities were surrounded by walls, even much earlier than these became necessary.*"[24] These were not, as stated, defensive walls, and were not overly effective as such: too long, too thin and too rudimentary to ensure a minimum of active interdiction. Walls of approximately one and a half metre, with towers providing little flank support, surmounted by skimpy bastions and preceded by inadequate trenches that were more an ornament than a deterrent, even for the lowliest of hordes.

When the urban perimeter fortification became indispensable rather than useful the situation changed and the cities began to take on the dismal appearance of military structures. To begin with, the massive defensive ring enclosed an area significantly smaller than the entire city, thus many large buildings were not included. Theatres, amphitheatres, basilicas and not infrequently even thermal baths remained outside of the walls, sad reminiscence of a safe past. In some cases, because of the great hurry to build defences, they came to resemble stone quarries, taking on the sinister aspect of ruins. The thickness of the walls increased, often by a double circuit with a second concentric ring, inside of which was the rubble of the demolitions. In the smaller cities the fortifications were so predominant as to transform them into veritable fortresses in which the civilian component was no longer

Altilia, Saepinum, Campobasso: sections of the defensive wall built in the I century.

visible. If we consider that in many legionnaire fortresses there existed at least a minimum of civilian life for the families of the garrisons, the two types of structures converged to the point of being identified as a single structure. Similarly, agricultural estates and large rustic villas began to progressively assume the connotations of the forerunner of medieval castles.

Those that were not sufficiently strong or that did not have a tactically advantageous position and sufficient men, were soon abandoned. In others the workers, free or slave, underwent a sort of militarization, their cities becoming garrisons. If we consider that in many military forts the men of the presidium cultivated the surrounding fields to supply food, we witness in this case also a convergence of roles, justly summarized by the *words militarization of the rurals and ruralisation of the military*! A situation that at first existed only behind the limes but that later spread like wildfire to practically every section of the Empire. If any emblematic proof of this very sad mutation were needed, it can be found, and was found, in the construction of the walls around Rome!

Benevento: le mura di epoca longobarda inglobano i ruderi dei monumenti della città romana.

Benevento: walls from the Longobard Era enclose ruins of monuments of the Roman city.

Aurelianus and his Grand but Sad Undertaking

Lucius Domitius Aurelianus was born in the year 214, in Sirmium, Illyria, of humble parents and was acclaimed emperor in 270, remaining on the throne for barely five years. His great military skills made him one of the greatest commanders of Rome and his logical mind, lacking any rhetoric, one of its best emperors. His brilliant military career soon saw him at the head of the cavalry and ensured his ascent to the throne. Behind his success, on the field of battle and in life, a proverbial impetuousness that made him more inclined to action than meditation, without ever falling into recklessness. He is described as being physically strong but also highly intelligent, perfectly conscious of his role in giving orders and in following them: a true commander and rigid upholder of military virtue and discipline. Among his successes, that of having succeeded in arresting the advance of a horde of barbarians migrating from the mouth of the Dniester toward the west, consisting of approximately 320 thousand men, the majority Goths, Heruli and Scythians. On that occasion, leading the cavalry of Claudius the Goth, he defeated them in Macedonia and followed them across the plains of Thrace and the lower Danube. Following this extraordinary victory he was awarded the consularship by the Emperor Valerian, and

adopted by a relative of Trajan, marrying his daughter and receiving a conspicuous patrimony.

Such a past explains his aversion to game, drinking and the supernatural, a rigidity that brought him to no longer tolerate the least moral or material laxity in his men, nor any unjustified violence or greed. He had no hesitation in taking unpopular decisions, such as when he had all Roman forces removed from Dacia, abandoning the entire province to the Goths and the Vandals: a very painful but necessary decision. How serious the situation had become will shortly be demonstrated by another incursion of the Germans who, having routed a Roman army from Piacenza, rapidly marched toward Rome, which managed to avoid devastation only thanks to the quick actions of Aurelianus. Once the threat was removed, it became clear that the only way to avoid the tragic repetition of similar events was to provide Rome, like the other cities, with massive walls. The ones that were still partly visible dated to the era of the Monarchy, almost seven centuries before and offered no effective defence. A new and modern wall was needed, one that, because of the technical and especially psychological resistance that had to be overcome, only a wilful and disenchanted emperor like Aurelianus could hope to have accepted. That colossal work turned out to be, paradoxically exalting and humiliating as it betrayed Rome's weakness while at the same time confirming its grandeur!

This spirit was magisterially evoked by Gibbon when he wrote:"*it was a grand but sad work, as the fortifications of the capital revealed the decadence of the monarchy...*"[25] Further emphasising this anguish was the frenetic speed with which the circle of walls was brought forward: less than eight years to build a wall of approximately 19 km! Impossible not to see in that breathless race a direct consequence of the decreasing resistance of the frontiers. Rome finally had its walls and thanks to them another century and a half of undisturbed survival, in itself something extraordinary. The Aurelian walls consisted of a brick structure, approximately 4 m thick for an average height of 8 m, resting on a deep

foundation. The curtain walls had a brick surface, according to the typical technique of the great Roman buildings of the III century, using all types of bricks, both new and used. 383 towers extended along its length, with more than 7000 merlons along communication trenches and bastions; there were 14 doors and only five side gates; the watch stations were 116 and there were at least 2000 large embrasures for the artillery; with innumerable smaller ones. That the entire construction proceeded urgently is confirmed by its rather approximated vertical position, relatively low and summarily articulated, clashing with planimetric perfection. In other words a structure that was certainly a large work but not a great one! When the contingency was over and there was time for more careful consideration and fewer limitations, numerous and indispensable improvements were made to the walls, raising them and covering the patrol path. Although originally this covering was very limited, in the following fifty years it was extended to the entire circuit, except for a few modest sections left open because of their obvious imperviousness. Much space was reserved to the artillery, held in due consideration from the very beginning of the design stage, as confirmed by the great number of towers that jutted out from the row of curtain walls.

Originally the vertical ascent of the towers was provided by a single and centrally located interior stair. After the increase in height, a second stair was added during the reign of Honorius to reach the higher levels. The roof of the towers was a pavilion in four layers, waterproofed with a layer of opus signinum. Each tower contained two large rooms one above the other, with the upper one reserved for the artillery and the lower for the archers. To this end ten curved rooms, each three feet high, extended along its perimeter walls: eight to attack the enemy and two to accede to the right and left communication trench. Since these rooms communicated directly with the top of the circle of walls, dangerously diminishing the towers' isolation, we presume that they were closed by strong iron fences that could be maneuvered only from within. A scheme anticipated in the city walls of Pompeii.

A monumental and secure concept was applied to the gates, according to the typical canons of Roman military architecture. However, like those in Trastevere, their ornaments and larger size are ascribed to a later date. In their initial version they probably all had a single supporting arch, a characteristic still common to the majority. The defensive criterion used was the usual double order of closing, with a rolling door for the exterior room and a double-leafed door on the interior, with a small intermediate security courtyard.

Aurelianus did not see his colossal work completed: preparing for yet another battle against the Parthians in 275, he was assassinated near Byzantium. Never before had the death of an emperor aroused such despair and terror in the entire population. He was followed by another six emperors, the most important and lasting being Marcus Aurelius Probo who managed to remain on the throne for approximately six years, contrary to his predecessors who had never exceeded two years, a state of affairs that stopped only in 284 when Diocletian ascended to the throne. Conventionally, this date marks the end of the High Empire and the beginning of the Low or Late Empire. A catabolic phase characterized by an increasing speed of dissolution, whose premonitory symptoms had already been fully perceived under the last emperors but that became evident and irreversible only under Diocletian.

The Great Reform of Diocletian

The ascent of Gaius Aurelius Valerius Diocletanius, was in many respects, an emblematic example of the extraordinary social mobility that had taken place within the Empire in the beginning of the III century. Born in 243 in Illyria, not far from today's Split, his father was a freedman and scribe to a Senator. After a brief but intense military career, he was acclaimed emperor in 284. For some writers, his great success was the result of brilliant administrative skills that put an end to the series of financial and military improvisations and expedients that had existed for over half a century. To begin with, aware of the vastness of the Empire between the East and the West, in 286 he once again split the Impe-

rial role by sharing his power with Maximinian, one of his valorous officers, granting him the title of *Augustus*. There resulted a diarchy that, only a few years later was again duplicated to facilitate military operations. Diocletian designated Galerius as his *Caesar* and Maximinian did the same with Constant Clorus. The role of the Cesari could be defined as that of a regent, or plenipotentiary vicar: the outcome was that while Diocletian governed the eastern provinces and Egypt, with the capital in Nicomedia, Galerius governed the Balkan provinces, with the capital at Sirmium; in the West, Maximinian governed Italy, Spain and North Africa with the capital in Milan, while Constant Clorus governed Gaul and Britannia, with the capital in Treviri. Obviously the political subdivision of the Empire had to be radically redefined, creating twelve territorial districts, called diocesi, and assigning three to each sovereign, each of which was governed by a vicar and subdivided into 101 provinces. This resulted in a tetrarchy or rather a double diarchy, given the dissimilarity of rank between *Augusti* and *Cesari*, a system that ensured twenty years of stable reign, a continuity lacking since the time of Antoninus Pius. A perfect representation of this concept may be observed in the statue of the *Tetrarchi*, where while the right hand of each Augustus rests on the shoulder of his Caesar, to indicate full accord, the left grips the hilt of the parazonium [26] to highlight the military nature of the agreement.

Confirmation of this system of government was to have taken place at the always critical moment of succession that became manifest in 305 with the abdication of Diocletian and Maximinian: the two *Cesari* became *Augusti*, selecting another two *Cesari*. Doubtless a successful outcome, but one that depended on the fact that it occurred while the two Augusti were still living, and with Diocletian still able to exercise a significant moral authority rather than a technical one. But when Constant Cloro died the following year, the mechanisms became miserably stuck. Constantine, his illegitimate son, was acclaimed *Augustus* by the local legions, while in Rome the praetorians acclaimed Maxentius, son of Maximinian. The confrontation between the two took place on the Milvio Bridge in 312 and Constantine, who in that circumstance used only a fraction of his forces, won, astutely attributing the merit of the victory to the God of the Christians, whom he had

The Provinces of the Empire and distribution of legionnaire fortresses.
Venice, the Tetrarchs.

chosen as his new celestial protector. Less prosaically, he appropriated a new infantry unit, the *auxilium*, to provide attack troops for the Roman army of the Late Empire. After 324, having eliminated all contenders, Constantine once again concentrated all power in the hands of one emperor.

Apart from the tetrarchy and its legal system, the true significance of Diocletian's reign was military, specifically his reform of the army. To begin with, he doubled the thirty-three legions instituted by Septimius Severus. Since the overall establishment of the army does not seem to have undergone any significant increases, it is highly probable that there was a simultaneous decrease in the establishment of each legion, a complement of perhaps half that of the Augustan era. According to tradition, these legions were assigned in pairs to provincial armies, integrated by cavalry units probably taken from Gallienus' great mounted army, also defined as an operational army. These:"*cavalry detachments, or vexillationes, as they are unclearly defined, were of a rank superior to those of the legions and even more so than the remaining alae and cohorts, [they were transformed] into frontier armies commanded increasingly by professional soldiers, duces, rather than provincial governors. This trend was continued by Constantine, who made almost all the posts exclusively military or exclusively civilian. However, the nucleus of a mobile army remained.*"[27]

To better understand the type legions instituted by Diocletian, it must be explained that they had little in common with the preceding one, and even less so:"*with the ancient legiones, thousands of men strong, as the scarce result of recruitment and the endemic financial crises would not have made it possible to maintain them. Much more realistically Diocletian divided the larger units into several corps with an establishment of 1,000 men each, that continued to be called legions.*

It is not even worth commenting on the differences of these new units compared to the regular legions as they are so obvious: less attack capability and a change in the roles and titles of the officers that transformed the Diocletian legions into completely new units.

Next to these legionnaire units he placed cavalry detachments taken from the operational armies of Gallienus and his successors, also called vexillationes- another title with which we are not familiar – probably of a rank superior to that of the legions and the remaining alae and cohortes of the Auxiliaries.

He also did not abandon the concept of a mobile army and a general reserve. Even with the scarcity of sources, we know that it was composed of a cavalry unit, equites Promoti and equites Comites, and infantry detachments, thusly: new legions whose components were called Iovini and Herculiani- from the

gods protectors of Diocletian (Jupiter) and Maximinian (Hercules) - and detachments called Solenses, Martenses and Lanciarii, composed of veteran legionnaires armed with spears and finally the sacer comitatus, apparently also formed of highly select elements."[28]

Busto di Diocleziano.
Bust of Diocletian.

Generally the division between *limitanei* and *comitanei*, divided the army into a static force and a mobile force. The difference between *limitanei* and *comitatensis* is the fact that the latter, though they were permitted to form a family, were not garrisoned in permanent locations. When on active duty, they were settled in the cities, creating friction with the civilians who lived there because of the privileges they enjoyed. And if Constantine centralized the command by transferring the military authority of the praetorian praefects to a Cavalry Master, *magister equitum*, and to an Infantry Master, *magister peditum*, leaving to the praetorian prefects only the responsibility for supplies, nothing of the sort could be hoped for the comitatenses. Mobile armies, even the major ones as in Gaul, the Danubian provinces and the Eastern provinces, were commanded by their own Cavalry masters. Smaller units were under the command of a senior officer defined as 'count', *comites*, the first hierarchical title of the approaching Middle Ages. In conclusion, the true difference between the army of the Principate and that of the Dominate is the basic difference between a field army, implicitly mobile and composed of selected and trained units, and a frontier army which was basically a standing army.

In brief:"*the entire war apparatus was divided into an operational army, organized into units of comitatenses, pseudocomitatenses and palatini and frontier units of limitanei, ripenses or riparienses.*

The limitanei forces, so called because they controlled the frontiers, or limes, were similar to the Diocletian units –legions, wings and cohorts of auxiliaries, and cavalry and infantry equites units, called simply auxiliares or milites. All the detachments were coordinated by a dux, except in the provinces of Africa where the command was held by a prepositus, whose superior, the comes, also commanded a large mobile army.

The mobile part of the army, the comitatenses, consisted of units of different origins. First, Constantine removed the vexillationes from the frontier legions, making them autonomous. Such was the case of the Legio II Italica Divitensium, whose detachment was taken from the Divitia (Deuts, Germany), the Tungrecani, from Tungri (Tongeren, Belgium) and the Quinta Macedonia from the original castrum of Oescus (modern Romania). Other units are remembered only by their number, such as the Undecimani or the Primani.

The emperor's guards were no longer the praetorians, who were disbanded after they fought alongside Maxentius at the gates of Rome. The new units that replaced them were an integral part of the operational, or manoeuvring, army. These were the scolae of the cavalry, an elite unit with 500 horses, plus a cavalry or infantry regiment of more recent origin composed of select soldiers.

Its breach troops consisted of new units of auxilia enrolled on the Rhine front, probably Germans. They included the Carnuti, the Bracchiati «those who wore the bracelet», the Iovii and the Victores.

Even though the limitanei werelong considered farmer-soldiers, they have been recently re-evaluated, for these contingents were fit for combat and especially suited to the task to which they were destined, the defence of the frontiers."[29]

Regarding the latter:"*an important discussion is now in progress among scholars of the army of Late Antiquity concerning the military significance of the limitatenses created by the Diocletian-Augustinian reforms and that led to the new army of the IV and V century, and their relationship with the land. Two contrasting theories, though with different nuances, hold the field. The first, attributed to Mommsen...*

considers the limitanei of the IV century as soldier-farmers anchored to the land, whose sedentary nature was detrimental to their military capabilities. The second, defended brilliantly by Mazzarino... maintains that, at least for the IV century and regarding their relationship with the land, there was no substantial difference between limitanei and comitatensi. He claimed that there is no specific proof that, in the course of the IV century, the frontier troops were a Bauernmilitz, and that they cultivated the lands given to them to defend; that they were consequently paid differently from the comitatenses operational troops; that their military efficiency was not in decline, as in many cases the limitanei were part of the operational army; and that it was not until the beginning of the V century and only in areas of the pars Orientis that thre were limitanei who possessed and cultivated the land ...«the error in the doctrine that speaks of limitatenses as soldiers-colonists is in having generalized and institutionalized a situation that was neither widespread nor juridically defined and that had been uncertain and in continuous development since the post-Diocletian era. Not all limitanei must have been farmers, but that as early as the IV century there were some limitanei who cultivated the land seems difficult to deny »... Nevertheless, it would be difficult to deny that frontier units were in progressive decline militarily by reason of the increasing importance of the operational army and because of their sedentary nature, and that in many cases they were transformed into formations of soldier-farmers ...

In some cases the Roman soldier could thus be a farmer ... This process takes place in the III century; one of the turning points seems to be, as for so many other aspects of Roman society, the era of Septimius Severus and his sons; another, the era of Gallienus and Aurelianus, the age of the Illyrian restitutores..."[30]

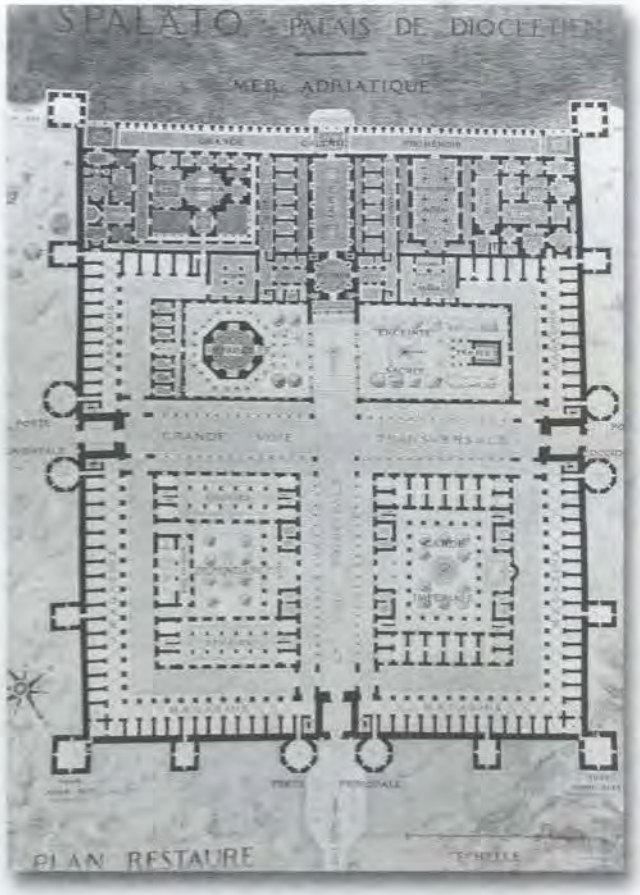
The singular aspect of the ruralisation of the military, acting as counterpoint to the militarization of the rurals, up to the formation of a single indistinct society in arms behind the frontiers, a presage of the Middle Ages, nevertheless requires a further explanation. Along the limes the legion very frequently: "*exploited ...[the] land; land that had come into the possession of the State by right of conquest and which could be disposed of, in theory, by the emperor. Sometimes it was confiscated by the treasury; but it could also be left by an act of generosity to the natives, or could be rented or granted in perpetuity to civilians. More often it was left to the soldiers, becoming territorium legionis, something that apparently every camp had, a sort of endowment to the legion as a corps; it could also be considered as the area which the legion had to defend; furthermore, it appears that a part of these could be «sub-let», to auxiliary units. This privilege would lead to another means of resolving the eternal problem of existence: by allowing civilians to rent and use this territorium legionis. It could also be sold; but it was unquestionably more convenient to rent or exploit it; the legion thus was surrounded by settlements that were partly commercial and partly agricultural and that helped to reduce its needs to the minimum.*"[31]

Other Changes by Diocletian

Previously we discussed the institution of a *military food-office*, an organisation that became necessary because of the inflation that followed the devaluation provoked by Septimius Severus. Diocletian also undertook the renewal of this facility, preventing the army from requisitioning, at a discretionary and arbitrary price and at times not even actually paying for, whatever it needed from the surrounding populace. The solution he devised was to transform the tax money envisaged for an entire region into various items, such as food, raw material, clothing, armaments, etc. Concerning the latter it should be noted that as the tactical formation of the new units was no longer the same as that of the preceding era, their principal weapons also changed. The *pilum*, now considered inadequate for confrontations of large cavalry formations or against enemies with a sizeable volume of long distance fire power, was replaced by a robust spear, the *spiculum*,

and by a smaller one called *veratum*. The gladius was replaced by the long Germanic sword, the *spatha*, which implied a different method of close combat, but required no changes to the helmet, cuirass and shield.

As already mentioned, in 305 Diocletian abdicated and retreated to the immense fortified palace he had built in Split and most of which still exists. After a brief and turbulent parenthesis that will drastically change his decrees for the administration of the Empire, Gaius Flavius Valerius Aurelius Constantine, better known as Constantine the Great ascends to the throne. Born in *Naissus*, modern Nis in Serbia, in 274, he was destined to become one of the most important of Roman emperors. Among his many acts perhaps the best known was the beginning of the strong alliance between the State and the Christian church.



The Constantinian Reforms

Apart from the celebrated episode of the monogram XP, the first two letters of the word XPISTOS, Christ, that Constantine had painted on the shields of his legionnaires, the victory over Maxentius was achieved through the adoption of a new tactical unit that would shortly be transformed into an elite corps of the late Empire. Its name was *auxilium* and it began with the members already enrolled by Constant or by Maximinian, the already mentioned *Carnuti* or *Cornuti*, that is «men with horns», that appear to be depicted on the Arc of Constantine, and the *Bracchiati*, «wearers of bracelets». Perhaps the horns of the former decorated the helmet, as the bracelets decorated the upper part of the arm, ornaments extraneous to Roman military tradition but highly present in the Germanic one. Later "*we find that these units, and another pair of select auxiliary units, the Iovii and the Victores, launch a German war cry before charging. There are good reasons to suppose the new formidable auxilia were recruited among the Germans of the Rhine valley, young men coming from the laeti, settlements of subjugated Germans, instituted by Diocletian and his colleagues in uninhabited territories of Gaul.*"[32] Constantine will later enrol new legions and organize others according to a different tactical logic.

The Army of the IV Century

To give even a very general description of the characteristics of the army of the IV century and its various subdivisions it must be said that it now consisted of a mobile section, called field, and one that was more or less equivalent, but static, called territorial.

According to sources the field army included approximately 42 legions divided into three classes: *legiones palatine*, *legiones comitatenses* and *legiones pseudocomitatenses*. There was also an infantry contingent never encountered before, called *auxilia palatina*, composed of about a hundred men according to the *Notitia Dignatum*.[33] The cavalry of the field army had 24 *vexillationes palatinae* and 61 *vexillationes comitatenses*.

The definition of vexillatio underwent a change, as around the end of the III century it loses its meaning of infantry detachment and becomes a cavalry unit, that is, a mobile unit. They also began to include units of heavy cavalry called *cataphracts*, with men, and often even the horses, protected by a cuirass. These are mentioned in the following phrase by Julian, who in the prevailing rhetoric of the time, praised Constant II in these words:"*who of the past emperors conceived and produced a similar cavalry and armament? You were the first to train and mastered for others this invincible wartime practice.*"[34]

The cataphract cavalry appears in the first half of the IV century: it does not appear to have been conceived by Constant II as the practice of covering horse and rider with an iron armour, heavy and resistant, comes from the East. The Romans had learned it from the Persians who in turn had taken it from the armament of the Scythians. Thus Ammianus Marcellus describes Constant II:"*the conscientious but little endowed general known for*

Roma: l'arco di Costantino e suoi dettagli.
Rome: the Arc of Constantine and details.

winning civil wars and losing foreign ones, solemnly entered Rome. He proceeded along in a gilded chariot sparkling with jewels, with banners of purple silk shaped liked a serpent's head hissing into the wind above his head. Along the sides marched infantrymen in armour and clibanarii, horsemen who appeared to be moving statues."[35]

Bassorilievi con cavalieri catafratti.
Bas-reliefs with cataphract horsemen.

If the Palatine troops are the elite troops of the new field army and the comitatensi the line troops, the pseudocomitatensi are the result of the transfer of entire units from the territorial army to the field army, confirming the persistence of a certain homogeneity. The superiority of the cavalry begins to become manifest, and the entire army starts to become a completely mounted force. From a tactical aspect the change was doubtlessly advantageous, because as the opposing formations moved at an average speed of 80 kilometres a day, their range of intervention was significantly greater. On the other hand, the characteristic that had allowed the Romans to conquer an immense empire was slowly disappearing: the meticulous logistical organisation of the infantry legion.

The emperor's guards were divided into 12 *scolae palatinae*, 5 in the west and 7 in the east, who performed the traditional tasks of the praetorians. They were under the command of a *magister officiorum* rather than a *magister militum*. There were still *Protectores Domestici*, who acted as bodyguards for the emperor and trained future officers. As for the territorial army, sources indicate that it was composed of approximately 150 legions and 118 cohortes and of 16 numbers and various smaller units, generically called *milites* and *auxiliares*. The territorial cavalry is divided into *alae, cunei equitum* or *equites*, and a couple of *cohortes equitate*. There were also numerous units of balistarii, detachments probably armed with light artillery or horse-drawn artillery, like the *carroballistae* who provided support to the field army.

In making an initial overall estimate of the establishment of all the units listed, we note that the decrease in the number of legionnaires begun by Diocletian continued during the Low Empire and the legions diminished significantly, becoming perhaps no more than a fifth or a sixth of their previous number. Each legion of the field army is estimated to have had 800-1,200 men, while the frontier ones had about 3,000. For the *auxilia palatini* sources indicate the establishment as between 500 and 800 members, while for the cavalry, *vexillationes, alae, cunei* or units of *equites* the respective numbers oscillated between 350-500 men. The *scolae*, also basically cavalry units, had 500 men. Assuming the lesser value, the total establishment of the army of the Late Empire would be a minimum of 450,000 soldiers and a maximum of 650,000. On paper the likely number is between these two extremes, without detriment to the fact that the cavalry now represented a fourth of the field army, and that this in turn represented 35-40% of all the military.

The command group was much more complex and in many respects very modern and far removed from that of the classical era. In the eastern section there were two central field armies, each commanded by a *magister militum praesentalis*, and three regional field armies in the Orient, Thrace and Illyria, each commanded by a *magister militum*. The western section had two central field armies, each commanded by a *magister equitum praesentalis* and a *magister peditum praesentalis*, as well as four regional armies in Gaul, Spain, Great Britain and Illyria, commanded by comites, with the exception of the one in Gaul, commanded by a *magister equitum*.

As for the frontier army, though we have no certain evidence, it is probable that the *comites* and the *duces* who commanded them were under the *magistri* of the field armies when operating in their sectors. Studies indicate that the number of men needed by the army in the IV century was approximately 30,000 a year, a number not far removed from that of the High Empire. To fill this need, they recurred to voluntary recruitment, hereditary recruitment and fiscal recruitment: the prevalence of one or the other depended solely on the circumstance of the moment.

In effect:"*enrolment for the army took place among Roman citizens and barbarians. Slaves were normally excluded; In fact, we have news of only two episodes – the revolt of Gildone in 397, and the invasion of Radagaiso, in 406 - in which slaves were put in uniform. Freedmen were also excluded as were all who worked in activities that were particularly low, like innkeepers and cooks. Beginning in the fifth century, (in the interest of their masters) the coloni ascripticii were also exempted as were the sons of functionaries of the provincial administration and of the decurions, whom the law obligated to follow the activities of the father. Volunteers were always accepted, but in the fourth and fifth century these do not appear to be a significant part of the new recruits. Beginning with the reign of Diocletian, the sons of soldiers or even veterans were obliged by law to enter the army. This rule was valid for all categories of military, for comitatenses and for limitanei and even, it seems, for the sons of officers: but it was not applied systematically. Periodically the government called a round-up: those who were too old or for some reason disabled were assigned to serve in the councils of their respective cities, the remainder were assigned to the comitatenses or to the limitanei according to their physical qualities. At the beginning of the fifth century persons who had been granted honorary codicils of rank had to periodically provide two or three recruits, according to their rank; but often this recruitment could be converted into a tax.*

In the fourth century, the principal source of recruiting was the mandatory conscription instituted by Diocletian; the levy took place each year and concerned all provinces, but sometimes the recruits owed could be converted into gold; this procedure was similar to the procedure for land tax, a combination of iugatio and capitatio, and thus weighed exclusively upon the agricultural population. Land owners were responsible directly to the government functionaries, who were responsible for assembling the number of recruits owed by their tenant farmers. But these naturally, as noted Vegetius, sent the government the worst they had, often paid vagabonds or other undesirables to fill the quota of men owed. Since the tax for a recruit was high, there were many small landowners whose quota was less than one man: in this case the contributors united into consortiums (capitula or temones). Valens established detailed rules for an equal distribution of the quota due by the members of a consortium. One recruit was valued at 30 solidi, plus 6 solidi for uniform and expenses, and the members of the consortium each paid into a common fund the portion corresponding to their taxable income; in turn, they were responsible for providing a recruit for the common quota and the person who was responsible for such, took 36 solidi (including his own contribution) and paid the recruit his 6 solidi. The same occurred in farming villages where the inhabitants together collected 30 solidi and these were given to the man who went to perform military service."[36]

Moneta con l'effigie dell'imperatore Valente.
Coin with effigy of the Emperor Valente.

Other Evolutions

Beginning in the IV century the entire Roman army, or rather Roman armies, underwent an additional, rapid and inarrestable process of fragmentation. A plethora of minor units, mostly mounted, and small detachments filled the lists giving the impression of extraordinary numbers. But in reality each unit became, day after day, increasingly smaller and less reliable. As an example, we know of a Diocletian *ala* of just 116 men, and of 77 horsemen in the *equites promoti* of a legion, a unit of 121 *equites sagittari*, 164 infantrymen in the *cohors XI Chamavorum* and of approximately 1,000 in some legions! In 359 two Danube cavalry units on duty in Mesopotamia totalled only 700 men, and in the beginning of the following century another cavalry unit, the *Unnigardae*, had barely 40. The list could continue, with the same tragic inconsistency, compared with their pretentious names and meticulous subdivisions.

One reliable study conducted of what were pompously called legions toward the end of the IV century concludes that:"*the legions were only shadows; the III Italica, for example presided four forts and its old fortress, in addition to providing a «legion» for the nearby mobile army. This impression of small units is reinforced by Julian's satisfaction with having taken 1,000 Germans prisoners «in two battles and a siege »; during the two month siege, 600 Francs were forced by hunger to come out of the two forts in which they had sought refuge and were sent to Constant II to serve in the army of the East. Julian's army in 357 counted only 13,000 men; in 363, with the entire empire to draw from, and with no other war commitments, his two armies for the invasion of Persia consisted of a total of 65,000 men.*"[37]

This was far removed from the numbers that, at least on paper, quantified the army of Diocletian as 390,000 strong and that, according to another estimate, was already greatly inferior to the approximately 645,000 of the old Empire! Why such a diversity between theoretical assessments and the actual numbers? One plausible explanation could be in their system of economic management, based on the supply of food rations to each soldier, in addition to a modest pay in coins, minted in enormous quantities. The overall number of the rations, in fact, coincided with the number of men but only if these rations were the same for all: however, as the ranks increased so did the rations, thus if a simple legionnaire received seven a week, for the same period an officer could receive twenty or even more for higher ranks. The total thus gave an establishment number that surpassed the actual number.

In spite of the highly generous emoluments, it became increasingly difficult to recruit additional troops and:"*it appears that conscription was very unpopular among the landowners and the farmers. The former preferred to pay 25 or 30 solidi per recruit, rather than lose men. The latter, once recruited, were sent to their units under strict surveillance and, in spite of these precautions, many of them fled during the voyage. A few reached the point of cutting their thumb as to be unable to serve. It is difficult to determine the extent of this practice. According to Ammianus, the Gauls never cut their thumb as did the Italians and it is probable that in the border provinces, like Gaul, Illyria and Thrace, where military service was an accepted duty for an extensive period, there were no great difficulties in finding new recruits.*"[38]

One reason that made the prospect of military service so different between inhabitants of the border provinces and the interior, was certainly not the fact that the former were accustomed to it and the latter afraid, but because those that lived behind the *limes* and assigned to operational armies and to standing armies, were stationed not far from their families. The others, however, were destined to remote areas, almost to a perpetual exile. This diversity explains the reason for the greater acceptance of service in limitanei compared with those of the *comitatenses*, in spite of the higher pay and career advancement.

The decrease in enrolment was contrasted in every way possible, even by reducing the minimum height requirement, to the point, finally, of enrolling even barbarians who had been taken prisoner. But although this increased numbers in the beginning of the V century, the procedure had catastrophic results: as these recruits had not the least sense of ethnic or legal affinity, they ended up blackmailing the very people they were supposed to defend, extorting even their lands and money.

Sheet from the Notitia Dignitatum.

Notitia Dignitatum

To attempt to trace the various divisions of the army in the IV century, the interval between the end of the reign of Diocletian in 305 and the death of Theodosius the Great in 395, a particularly lively period in the vaster context of the Low Empire, there is a singular document known as the *Notizia Dignitatum*. This is an anonymous document that lists all the dignitaries of the Late Empire and all civilian and military offices. Forty-five books of the Notizia were written in the year 420 for the West and an additional 45 in the year 420 for the East. The document has come down to us through a IX century copy that, in addition to providing the text, also illustrates the different standards of each unit. Following are the various jurisdictions according to the document:

OCCIDENS (PARTES IMPERII)

Proconsulatus Africa	
Africa	proconsul
Praefectura Italia	praefectus praetorio
Diocesis Italia	═══
Aemilia	consularis
Alpes cottia	praeses
Flaminia & Picenum Annonarum	consularis
Liguria	consularis
Raetia prima	praeses
Raetia secunda	praeses
Venetia & Histria	consularis
Diocesis Urbs Roma	vicarius
Apulia & Calabria	corrector
Campania	consularis
Corsica	praeses

Lucania & Bruttii	corrector
Picenum suburbicarium	consularis
Samnium	praeses
Sardinia	praeses
Sicilia	consularis
Tuscia & Umbria	consularis
Valeria	praeses
Diocesis Illyricum	
Dalmatia	praeses
Noricum mediterraneum	praeses
Noricum ripense	praeses
Pannonia prima	praeses
Pannonia secunda	consularis
Savia	corrector
Valeria	(dux?)

Diocesis Africa	vicarius
Africa	proconsul
Byzacium	consularis
Mauretania caesariensis	dux et praeses
Mauretania sitifensis	praeses
Numidia	consularis
Tripolitania	praeses
Praefectura Galliae	praefectus pretorio
Diocesis Hispaniae	vicarius
Baetica	consularis
Baleares insulae	praeses
Carthaginiensis	praeses
Gallaecia	consularis
Lusitania	consularis
Tarraconis	praeses
Tingitania	praeses
Dioc. Septem Prov.	vicarius
Alpes maritimae	praeses
Aquitanica prima	praeses
Aquitanica secunda	praeses
Narbonensis prima	praeses

Narbonensis secunda	praeses
Novempopuli	praeses
Viennensis	consularis
Diocesis Galliae	=======
Alpes poeninae et graiae	praeses
Belgica prima	consularis
Belgica secunda	consularis
Germania prima	consularis
Germania secunda	consularis
Lugdunensis prima	consularis
Lugdunensis secunda	praeses
Lugdunensis senonia	praeses
Lugdunensis tertia	praeses
Maxima sequanorum	praeses
Diocesis Britanniae	vicarius
Britannia prima	praeses
Britannia secunda	praeses
Flavia caesariensis	praeses
Maxima caesariensis	consularis
Valentia	consularis

OCCIDENS (PARTES IMPERII)

Proconsulatus Asia	
Asia	proconsul
Hellespontus	consularis
Insulae	praeses
Proconsulatus Achaia	proconsul

Praefectura Oriens	praefectus pretorio
Diocesis Aegyptus	praefectus augustalis
Aegyptus	praeses
Arcadia	praeses
Augustamnica	corrector

Libya inferior	praeses
Libya superior	praeses
Thebais	praeses
Diocesis Oriens	comes
Arabia	dux et praeses
Cilicia	consularis
Cilicia secunda	praeses
Cyprus	consularis
Euphratensis	praeses
Isauria	comes et praeses
Mesopotamia	praeses
Osrhoena	praeses
Palaestina	consularis
Palaestina salutaris	praeses
Palaestina secunda	praeses
Phoenice	consularis
Phoenice Libanensis	praeses
Syria	consularis
Syria salutaris	praeses
Diocesis Asiana	vicarius
Caria	praeses
Hellespontus	(proc. Asia)
Insulae	(proc. Asia)
Lycaonia	praeses
Lycia	praeses
Lydia	consularis
Pamphylia	consularis
Phrygia pacatiana	praeses
Phrygia salutaris	praeses
Pisidia	praeses
Diocesis Pontica	vicarius

Armenia prima	praeses
Armenia secunda	praeses
Bithynia	consularis
Cappadocia prima	praeses
Cappadocia secunda	praeses
Galatia	consularis
Galatia salutaris	praeses
Helenopontus	praeses
Honorias	praeses
Paphlagonia	corrector
Pontus polemoniacus	praeses
Diocesis Thracia	vicarius
Europa	consularis
Haemimontus	praeses
Moesia secunda	praeses
Rhodope	praeses
Scythia	praeses
Thracia	consularis
Praefectura Illyricum	praefectus pretorio
Diocesis Macedonia	vicarius
Creta	consularis
Epirus nova	praeses
Epirus vetus	praeses
Macedonia	consularis
Thessalia	praeses
Diocesis Dacia	═══
Dacia mediterranea	consularis
Dacia ripensis	praeses
Dardania	praeses
Moesia prima	praeses
Praevalitana	praeses

Concerning the legions that can be deduced from this document, according to the following list, although by now their size was not and could not be specified, they continued to have a number and name. Probably the comitatensi, who may be considered as regular units, consisted of about a thousand men when newly formed, while the number of the old Imperial legions could be as high as 6,000. The pseudocomitatensi, on the other hand, were frontier units detached to the field army for special campaigns and often remaining there. Some legions of the High Empire became pseudocomitatenses units.

Legio I	
I Armeniaca	pseudocomitatense, in east
I Flavia Constantia	pseudocomitatense, in Gaul
I Flavia Gallicana	comitatense
I Flavia Gemina	comitatense, in Thrace
I Flavia Martis	pseudocomitatense, in Gaul
I Flavia Pacis	comitatense, in Africa
I Flavia Theodosiana	comitatense, in east
I Illycorum	pseudocomitatense, in Sirya
I Iovia	pseudocomitatense, in Romania
I Isaura Sagittaria	pseudocomitatense, in east
I Iulia Alpina	pseudocomitatense, in Italy
I Martia (o Martiorum)	comitatense
I Maximiana	pseudocomitatense, in Egypt
I Norica	pseudocomitatense, nel Noricum
I Pontica	comitatense, in Asia Minor
I Valentiniana	comitatense, in Egypt
Legio II	
II Armeniaca	pseudocomitatense, in east
II Britannica	comitatense
II Felix Val. Thebaeorum	comitatense, in east
II Flavia Constantiniana	pseudocomitatense, in Africa
II Flavia Gemina	comitatense, in east
II Flavia Virtutis	comitatense, in Africa
II Herculia	pseudocomitatense, in Romania
II Isaura	pseudocomitatense, in Isauria
II Iulia Alpina	pseudocomitatense, in Illyria
II Sabina	comitatense

Legio III	
III Diocletiana	comitatense, in Egypt
III Flavia Salutis	comitatense, in west
III Herculia	comitatense, in Illyria
III Isaura	pseudocomitatense, in Isauria
III Iulia Alpina	comitatense, in Italy
Legio IV	
IV Italica	pseudocomitatense, in east
IV Martia	comitatense, in Arabia
IV Pathica	pseudocomitatense, in east
IV Sorana	comitatense
Legio V	
V Iovia	comitatense, in Bulgaria
V Marthia	comitatense
V Parthica	pseudocomitatense, in Asia Min
V Urbana	comitatense
Legio VI	
VI Gallicana	comitatense
VI Gemella	comitatense
VI Herculia	comitatense
VI Hispana	comitatense
VI Parthica	pseudocomitatense, in east
Legio VIII	
VIII Palatina	comitatense, in Italy
Legio XI	
XI Palatina	comitatense, in Spain
Legio XII	
XII Victrix	comitatense

The Eagles Fall

In combat the army of the IV century attempted to emulate the army of the first Imperial Era: but it was more a matter of form than substance. When well commanded, however, it still managed to fight with valour and to achieve some victories. From the pages of Ammianus we clearly note an unquestionable esprit de corps, a certain residual pride that sustained those men in their long marches, across fords and great rivers, to defend their isolated frontier strongholds. The: "*comitatensis were at least comparable to the auxiliaries of the first Empire, the soldiers who had defeated the Caledonians at Mons Grapius... In 378 in Hadrianople, on 9 August, the cavalry finally affirmed its supremacy over the infantry and for the Roman army this was the worst day in its history.*"[39] Thus did Ammianus Marcellinus relate in his 31st book:

"***XII - 10*** *And came the dawn of 9 August [year 378], as marked on the calendar; they soon advanced while their baggage was left close to the walls of Hadrianople with a guard of soldiers from the legions (the treasure and other insignias [purple mantle, diadem, sceptre, globe, imperial chariot] of the emperor were within the walls, with the praefect [at the praetorium] and members of the Council).*

11. *Having traversed broken ground, as the burning day progressed toward noon after eight miles [from Hadrianople] finally we saw the wagons of the enemy (as reported by the Scouts) arranged in a circle. As was their custom, the barbarian host raised a fierce and hideous yell; while the Roman commanders marshalled the battle formation: the right flank of the cavalry was made to advance while the chief portion of the infantry remained in place.*

12. *The left flank of the cavalry (assembled with great difficulty: as many of the knights were still scattered through the streets) advanced at great speed; while this wing was deploying and met with no obstacle, the barbarians were alarmed at the terrible clang of their arms and the threatening clash [of the swords on the] shields; as a portion of their army (with Alatheus and Saphrax) was still far and, though sent for, it had not yet arrived, they sent ambassadors to ask for peace.*

13. *The emperor was offended at the lowness of their rank, asking for nobles suited [to the needs], so that the treaties would be lasting; but they purposely delayed; [hoping] that during the fallacious truce their cavalry that should be close would return and the Roman soldiers, suffering from the summer heat, parched [by thirst]; and the vast plain shone with fires set by the enemy using <flammable> materials and dry tinder for the same purpose [to exhaust the soldiers].To this difficulty was added another that was fatal: hunger now tormented men and animals.*

14. *In the meantime Fritigern (skilful in divining the future and fearful of an uncertain struggle) of his own initiative sent a herald of low social class, requesting that some men taken from the nobles be sent to him as hostages: without fear he would brings both military aid and supplies.*

15. *The proposal of this feared commander was accepted and approved: with the consent of all, the tribune Equitius was ordered to go as hostage (he was high steward of the palace and a relation of Valens); but he refused: for he had once been captured by the enemy and had escaped from the city of Dibaltum; thus he feared the anger of such irrational people. Richomeres offered himself voluntarily: he went willingly for he judged such action to be noble and becoming to a courageous man. He set out, bearing vouchers of his rank and [noble] origin.*

16. *As Richomeres moved toward the enemy camp, the archers and Scutarii (under the command of Bacurius [king of] Iberia and of Cassio) advanced excessively and impetiously and on approaching the enemy attacked them but then withdrew without success as they had advanced too rashly and in this manner disgraced the beginning of the battle.*

17. *This ill-timed attack frustrated the willingness of Richomeres (as he was not permitted to proceed); the*

cavalry of the Goths (returned with Alatheus and Saphrax; and with them a battalion of Alani) arrived like a thunderbolt striking the nearby mountains: their rapid charge spreading confusion and slaughter among all.

XIII - 1. *Arms, arrows and javelins were causing slaughter among the Romans; and raging more fiercely than usual Bellona was blowing her trumpets, harbingers of death. Our men were withdrawing, stopping at the cries of many; the battle increased like a conflagration terrifying the soul of the soldiers (some of whom had been pierced by the projectiles and arrows hurled at them).*

2. *The two lines of battle clashed like the rams of ships: thrusting like the waves of the sea, tossed to and fro. The left wing of the Romans advanced up to the wagons and would have gone further with some help; but they were abandoned by the rest of the cavalry and, pressed upon by the mass of the enemy, it was crushed and beaten as if overwhelmed by a vast rampart. Our infantry remained standing lacking all support while the maniples were so huddled together that no one could unsheathe a sword or withdraw his hand. Such great dust was raised that it was not possible to see the sky and there resounded terrible cries; and the darts bearing death on every side reached their mark and injured them as they could not be guarded against or avoided.*

3. *When the barbarians, rushing in enormous formations, beat down horses and men and there was no place to fall back (as they were so packed it was impossible to escape), our soldiers with great loathing of death, faced the enemy and took to their swords and slew [the barbarians]: mutual blows of axes dashed to pieces shields and breastplates.*

4. *The barbarians towered in their fierceness: with their jaws hissing because their legs had been pierced or the right hand cut off by the blow of a sword or the side transfixed, even as death approached their eyes looked round defiant; for the falling of the combatants, the fields were covered with cadavers, one heard the groans of the dying and of the fearfully wounded.*

5. *Amidst this great tumult and confusion, the infantrymen (exhausted by toil and danger) no longer had the strength nor the ability to make decisions and they were forced to content themselves with drawing their swords as most of their javelins had been broken by the continuous blows inflicted, thrust themselves into the piles of enemies without thinking of their own life and seeing as there was no possibility of escape.*

6. *The ground was covered by streams of blood causing them to slip if they attempted to move: they thus attempted to spend their lives dearly and with such vehemence did they resist the barbarians who pressed them, that some died by their own weapons. [the precursor of friendly fire a.n.] The blackness of the blood confused all; wherever the eye turned, lifeless corpses were trampled upon without mercy (there were piles of the dead).*

7. *The sun now high (after having traversed the sign of Leo and reached above the constellation Virgo [August]) scorched the Romans weakened by lack of food, exhausted by thirst and burdened by arms. And finally, as the weight of the barbarians upon them was imminent, our soldiers withdrew and took to disorderly flight wherever possible: the only safety for those extreme ills!*

8. *While they were all scattered and fleeing over roads they did not know, the emperor (surrounded by a horde of ill auguring fears!) made his way over heaps of bodies and sought refuge among the Lanciarii and Mattiarii: who stood firm and immovable resisting the enemy as far as they could. Seeing this, Trajan cried that all hope was lost if the emperor, abandoned by his guards, was not protected at least by the foreign auxiliary troops.*

9. *Hearing this, the count Victor hastened to bring up (to defend the emperor) the Batavians, who were nearby in reserve, but none of them could he find; thus, he too retreated. In a similar manner Richomeres and Saturninus escaped danger.*

10. *With rage flashing in their eyes, the barbarians pursued our men who were in a state of torpor because the heat [of the blood] in their veins had deserted them: some fell without knowing who smote*

them, others were crushed by the weight of others, others still were slain by wounds inflicted by their comrades (there was no retreat for those who attempted to resist or those who yielded).

11. *The roads were blocked by many wounded dead; and heaps of dead horses covered the fields. A moonless night put an end to this catastrophe (that never would be remedied and that cost the Roman state so dear!).*

12. *At the first sign of the night the emperor (as it was believed since no one said he had seen him or that he was present) fell among his soldiers mortally wounded by an arrow; he died quickly and his body was not found: for a group of the enemy loitered long in those fields to plunder the dead, and none of the defeated or inhabitants ventured to go there.*

13. *(We know that the emperor [G.Messio Quinto Trajan] Decius fighting courageously against the barbarians died a similar death: thrown by his falling and frightened horse, for he had not the strength to hold him – plunged into a swamp from which he could not emerge and his body was not found).*

14. *Others report that Valens did not die; together with the candidati [personal guards] and a few eunuchs he was brought to a cabin whose second story was well protected: here he died, cared for by unskilled hands. Surrounded by the enemy who did not know who he was, he was saved from the disgrace of being made a prisoner.*

15. *His enemy pursuers attempted to force the barred doors, but they were assailed with arrows from the top of the house and they, not to lose the possibility of collecting plunder because of a delay they could not resolve, piled hay and wood and setting fire to them burnt down the building and all in it.*

16. *But one of the candidati escaped, dropping from the window; captured by the barbarians he revealed what had taken place, which caused them great concern [for they felt] defrauded of a great glory: that of not having taken the ruler of the Roman state alive! This same soldier secretly returned to our people and recounted the affair...*

18. *Among the many illustrious men who died were Trajan and Sebastian; with them died thirty-five tribunes (with and without military command), Valerianus and Equitius (the first master of the horse, the second high steward). And Potentius also (tribune of the promoti), who fell in the flower of his youth, admired by all persons of virtue, respected for his own merits and those of this father Ursicinus (formerly commander of all the forces).*

19. *We know that only a third of the army was saved: in written history there is no other such total defeat except for the battle of Cannae [216 B.C.]..."*[40]

The trained and equipped infantry lost at Hadrianople could no longer be replaced: the new emperor, Theodosius, lacking adequate military forces was obliged to use those of the Goths, granting them the faculty of settling in the Empire, in the Danubian provinces. At his death in 395 their movement toward the west resumed and there were not sufficient troops to stop them. Their general, Stilicone, succeeded in stopping them for a time, but his reputation collapsed along with the Rhine frontiers at the end of 406 under the pressure of the Germans and the Francs who rapidly spread into Gaul and Spain.

It is possible, though with a certain approximation, to trace the phases of the decline and disappearance of the Roman army of the west. According to the *Notitia Dignitatum*, which list may have been updated up to the end of the reign of Honorius in 423, in the beginning of the year 400, as delineated previously in detail, the size of the forces still appears to be imposing. The army stationed in Italy still had:"*forty-four regiments and the one in Gaul fifty-eight; smaller groups of comitatus were stationed under the command of their comites in Illyria, in Spain, in Africa and in Britannia. Together they formed a total of approximately 110,000 men. But data found on paper are at times deceiving. The army stationed in Africa was composed almost exclusively of limitanei, promoted to comitatenses, and also in the other armies many of the units consisted of limitanei - in Gaul at least twenty-six of the fifty-eight units. The propor-*

tion of limitanei seems high among the troops along the high Danube (117 units) and in Britannia (46); elsewhere, in Africa, Gaul and Spain, only fifty-two units are reported in all, twenty of which must have been cancelled, as they passed to the comitatus. The general total of the limitanei is, in theory, approximately 130,000 men; but one wonders to what extent this may have existed only on paper.

The army stationed in Britannia stopped being part of the forces of the Empire... during the final part of the reign of Valentinian III; the one in Africa was probably dispersed when the vandals took possession of the entire region, upon the death of Valentinian in 455; in Spain the army ceased to exist, we believe, when the Visigoth kings conquered the Iberian peninsula, on the death of Majorian, in 457. The army of Gaul disintegrated not long after; however it seems to have continued to exist in Belgiaca, until Clodoveo defeated and killed its last commander, Siagrio, in 486. The army of Italy, which was all that remained under the command of the last emperors of the west, slowly diminished due to lack of funds and recruits. In the events that led to the end of the Western Empire, there is no talk of troops in Italy that were not federated."[41]

In 410 the Visigoths invaded Italy and for the first time sacked Rome: the Aurelian walls had not stopped them. In 455 there was another looting by the Vandals and finally, in 476, the last emperor of the West, with the prophetic name of Romulus Augustulus, was deposed and exiled to Naples, to the isle of Megaride. A few years after, the final remnants of the great Roman army disappeared forever.

A few phrases speak of the last military units during their final days of existence, before their final and irreversible dissolution. We learn that the *Cohors IX Batavorum*, garrisoned in Passau, sent some of its men to collect the back pay of the entire unit. Nothing more was known of them, until the river returned their cadavers. We know also that when the ruined fort of Abinneo was evacuated, its final defenders locked the doors with a key before they left, then dispersed among the civilian population. Sadder still the end of another unit of Batavians, perhaps the final one stationed in the fort of *Faviane* on the Danube, around 470-480, recounted by Eugippius in the Life of San Severino:

"Per idem tempus, quo Romanum constabat imperium, multorum milites oppidorum pro custodia limitis publicis stipendiis alebantur. Qua consuetudine desinente simul militares turmae sunt deletae cum limite, Bataviansno utcumque numero perdurante. Ex quo perrexerant quidam ad Italiam extremum stipendium commilitonibus allaturi, quos in itinere peremptos a barbaris nullus agnoverat.

When the Roman Empire was still in existence, the soldiers were maintained with public money in many cities to defend the frontiers, but with the end of this system the military units were eliminated along with the frontiers."[42]

Anton Sminck Pitloo, Castel dell'Ovo dalla spiaggia, prima metà dell'800.

Nella pagina a fianco: Napoli, Castel dell'Ovo visto dalla spiaggia.

Anton Sminck Pitloo, Castel dell'Ovo from the beach, first half of the 1800s.

Side page: Naples, Castel dell'Ovo viewed from the beach.

Notes

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2 - E. N. LUTTWAK, *La grande strategia dell'impero romano, dal I al III secolo d.C.*, Milan 1981, p. 177.

3 - M. MAZZA, *Lotte sociali e restaurazione autoritaria nel III secolo d.C.*, Bari 1973, pp. 232-233.

4 - E. GIBBON, *Storia della decadenza e caduta dell'Impero romano*, trans. G. Frizzi, Torino 1967, vol. I, pp. 77-78.

5 - E. GIBBON, *Storia della decadenza...*, cit., p. 117.

6 - Y. LE BOHEC, *L'esercito romano*, Urbino 2001, p. 256.

7 - E. GIBBON, *Storia della decadenza...*, cit., p. 305.

8 - E. GIBBON, *Storia della decadenza...*, cit., p. 294.

9 - E. GIBBON, *Storia della decadenza...*, cit., p. 296.

10 - E. GIBBON, *Storia della decadenza...*, cit., p. 296.

11 - E. GIBBON, *Storia della decadenza...*, cit., p. 300.

12 - Y. LE BOHEC, *L'esercito...*, cit., p. 286.

13 - Y. LE BOHEC, *L'esercito...*, cit., p. 291.

14 - M. MAZZA, *Lotte sociali...*, cit., p. 408.

15 - M. MAZZA, *Lotte sociali...*, cit., pp. 321-322

16 - Y. LE BOHEC, *L'esercito...*, cit., p. 292.

17 - E. GIBBON, *Storia della decadenza...*, cit., p. 235.

18 - J. WACHER, *Il mondo di Roma imperiale*, Bari 1989, p. 123.

19 - E. N. LUTTWAK, *La grande strategia...*, cit., p. 99.

20 - Y. LE BOHEC, *L'esercito...*, cit., p. 264.

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22 - E. N. LUTTWAK, *La grande strategia...*, cit., p. 183.

23 - The episode reported by Flavio Vopisco, is taken from D.CARRO, *Classica. Storia della marina di*

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24 - E. N. LUTTWAK, *La grande strategia...*, cit., p. 223.

25 - E. GIBBON, *Storia della decadenza...*, cit., p. 273.

26 - C. BLAIR, *Enciclopedia ragionata delle armi*, Verona 1979, p. 235 under *parazonio.*

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29 - A. M. LIBERATI, F. SILVERIO, *Legio...*, cit., pp. 153-154.

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33 - G. CLEMENTE, *La 'Notitia Dignitatum',* in *Saggi di storia e letteratura*, n°4, Cagliari 1968.

34 -GIULIANO, *Or.* 1 [A Costanzo 30,37].

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37 - J. WACHER, *Il mondo...*, cit., p. 130.

38 - A. H. M. JONES, *Il tramonto...,* cit., p. 327.

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40 - AMMIANUS MARCELLINUS, *Storie*, bk XXXI, edited by G. Viansino, Milan 2002.

41 - A. H. M. JONES, *Il tramonto...,* cit., p. 322.

42 - A. H. M. JONES, *Il tramonto...,* cit., p. 322. The phrase is taken from: EUGIPPIUS, *Vita sancti Severini,* 20.

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